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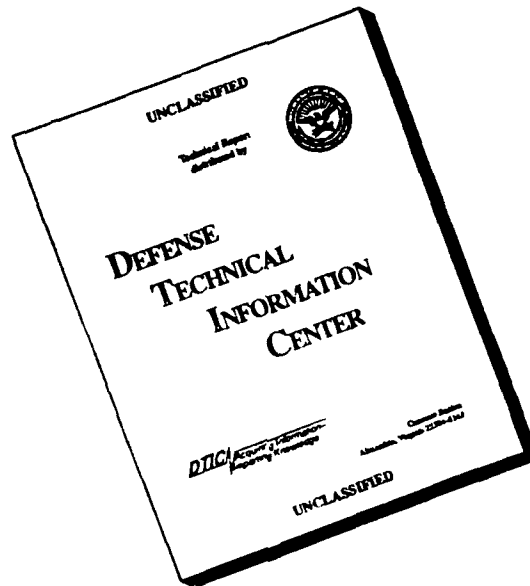
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TABLE OF CONTENTS

	<u>Page No.</u>
PREFACE	i
1.0 INTRODUCTION	1-1
1.1 Purpose	1-1
1.2 Background	1-2
2.0 PROBLEM QUANTIFICATION	2-1
2.1 Demand-Capacity	2-1
2.1.1 Demand for Air Service	2-5
2.1.2 Capacity of Existing and Proposed Airports	2-7
2.1.3 Airport Development Requirements	2-11
2.2 Alternatives	2-15
2.2.1 Joint Use of Scott Air Force Base	2-15
2.2.2 Construction of a New Airport	2-15
2.2.3 Expansion of an Existing Airport	2-16
St. Louis Regional	2-16
St. Louis Downtown-Parks	2-17
Highland-Winet	2-17
Shafer-Metro East	2-17
2.2.4 Do Nothing	2-18
3.0 ANALYSIS OF ALTERNATIVES	3.1-1
3.1 Scott Air Force Base	3.1-1
3.1.1 Institutional Issues	3.1-1
Joint Use	3.1-1
Security	3.1-2
3.1.2 Technical Issues	3.1-5
Airspace/Obstructions	3.1-5
Airport Development Requirements	3.1-7
Capacity	3.1-8
3.1.3 Economic Issues	3.1-8
Cost of Construction	3.1-8
3.1.4 Environmental Issues	3.1-10
Land Acquisition	3.1-10
Noise	3.1-11
Compatible Land Use	3.1-11
Historical and Archeological Locations	3.1-13
Section 4(f) Lands	3.1-15
Endangered Species	3.1-16
Biotic Communities	3.1-17
Farmlands	3.1-18
Wetlands	3.1-19
Floodplains	3.1-23
Access	3.1-24
Socio-Economic Impacts	3.1-25
Social Impacts	3.1-30

		<u>Page No.</u>
3.2	Construct a New Airport	3.2-1
3.2.1	Institutional Issues	3.2-1
	Brief Statement of History of Past Efforts	3.2-1
3.2.2	Technical Issues	3.2-7
	Airspace/Obstructions	3.2-7
	Airport Development Requirements	3.2-8
	Capacity	3.2-8
3.2.3	Economic Issues	3.2-8
	Cost of Construction	3.2-8
3.2.4	Environmental Issues	3.2-9
	Land Acquisition	3.2-9
	Noise	3.2-10
	Compatible Land Use	3.2-10
	Historical and Archeological Locations	3.2-10
	Section 4(f) Lands	3.2-11
	Endangered Species	3.2-11
	Biotic Communities	3.2-11
	Farmlands	3.2-12
	Wetlands	3.2-12
	Floodplains	3.2-12
	Access	3.2-13
	Social and Socioeconomic Impacts	3.2-13
3.3	St. Louis Regional	3.3-1
3.3.1	Institutional Issues	3.3-1
3.3.2	Technical Issues	3.3-1
	Airspace/Obstructions	3.3-1
	Airport Development Requirements	3.3-2
	Capacity	3.3-4
3.3.3	Economic Issues	3.3-4
	Cost of Construction	3.3-4
3.3.4	Environmental Issues	3.3-5
	Land Acquisition	3.3-5
	Noise	3.3-7
	Compatible Land Use	3.3-8
	Historical and Archeological Locations	3.3-9
	Section 4(f) Lands	3.3-10
	Endangered Species	3.3-11
	Biotic Communities	3.3-12
	Farmlands	3.3-12
	Wetlands	3.3-14
	Floodplains	3.3-14
	Access	3.3-15
	Socio-Economic Impacts	3.3-16
	Social Impacts	3.3-17

3.4	St. Louis Downtown-Parks	3.4-1
3.4.1	Institutional Issues	3.4-1
3.4.2	Technical Issues	3.4-1
	Airspace/Obstructions	3.4-1
	Airport Development Requirements	3.4-3
	Capacity	3.4-4
3.4.3	Economic Issues	3.4-4
	Cost of Construction and Phasing	3.4-4
3.4.4	Environmental Issues	3.4-5
	Land Acquisition	3.4-5
	Noise	3.4-7
	Compatible Land Use	3.4-7
	Historical and Archeological Locations	3.4-8
	Section 4(f) Lands	3.4-11
	Endangered Species	3.4-12
	Biotic Communities	3.4-12
	Farmlands	3.4-13
	Wetlands	3.4-14
	Floodplains	3.4-15
	Access	3.4-15
	Socio-Economic Impacts	3.4-16
	Social Impacts	3.4-17
3.5	Highland-Winet	3.5-1
3.5.1	Institutional Issues	3.5-1
3.5.2	Technical Issues	3.5-1
	Airspace/Obstructions	3.5-1
	Airport Development Requirements	3.5-2
	Capacity	3.5-3
3.5.3	Economic Issues	3.5-3
	Cost of Construction	3.5-3
3.5.4	Environmental Issues	3.5-4
	Land Acquisition	3.5-4
	Noise	3.5-5
	Compatible Land Use	3.5-5
	Historical and Archeological Locations	3.5-6
	Section 4(f) Lands	3.5-7
	Endangered Species	3.5-7
	Biotic Communities	3.5-7
	Farmlands	3.5-8
	Wetlands	3.5-9
	Floodplains	3.5-9
	Access	3.5-9
	Socio-Economic Impacts	3.5-11
	Social Impacts	3.5-12

		<u>Page No.</u>
3.6	Shafer-Metro East	3.6-1
3.6.1	Institutional Issues	3.6-1
3.6.2	Technical Issues	3.6-1
	Airspace/Obstructions	3.6-1
	Airport Development Requirements	3.6-2
	Capacity	3.6-2
3.6.3	Economic Issues	3.6-3
	Cost of Construction	3.6-3
3.6.4	Environmental Issues	3.6-4
	Land Acquisition	3.6-4
	Noise	3.6-4
	Compatible Land Use	3.6-5
	Historical and Archeological Locations	3.6-6
	Section 4(f) Lands	3.6-7
	Endangered Species	3.6-7
	Biotic Communities	3.6-7
	Farmlands	3.6-8
	Wetlands	3.6-9
	Floodplains	3.6-9
	Access	3.6-10
	Socio-Economic Impacts	3.6-10
	Social Impacts	3.6-12
3.7	Do Nothing	3.7-1
3.7.1	Institutional Issues	3.7-1
3.7.2	Technical Issues	3.7-1
	Airspace/Obstructions	3.7-1
	Airport Development Requirements	3.7-1
	Capacity	3.7-1
3.7.3	Economic Issues	3.7-1
	Cost of Construction	3.7-1
3.7.4	Environmental Issues	3.7-2
	Land Acquisition	3.7-2
	Noise	3.7-2
	Compatible Land Use	3.7-2
	Historical and Archeological Locations	3.7-2
	Section 4(f) Lands	3.7-2
	Endangered Species	3.7-3
	Biotic Communities	3.7-3
	Farmlands	3.7-3
	Wetlands	3.7-3
	Floodplains	3.7-3
	Access	3.7-4
	Socio-Economic Impacts	3.7-4
	Social Impacts	3.7-4
	Summary	3.7-4
4.0	SUMMARY COMPARISON MATRIX	4-1
5.0	CONCLUSIONS	5-1

Appendices

- A. Commercial Air Traffic Operations - Lambert-St. Louis
- B. Analysis of Air Traffic Patterns - Lambert-St. Louis
- C. Review of Air Carrier Interests
- D. Noise Impacts
- E. Soils Classifications
- F. Comments on Preliminary Phase I Report and Disposition

LIST OF EXHIBITS

<u>Exhibit Number</u>	<u>Exhibit Name</u>	<u>Following Page No.</u>
2.2-1	Alternate Site Location Map	2-16
3.1	Lambert-St. Louis International Airport/ Scott Air Force Base Airspace Diagram	3.1-6
3.1-1	Scott AFB N.E. Development Vicinity Map	3.1-7
3.1-2	Scott AFB N.E. Development Location Map	3.1-10
3.1-3	Scott AFB N.E. Development Soils Map	3.1-18
3.1-4	Scott AFB N.E. Development Wetlands Map	3.1-19
3.1-5	Scott AFB N.E. Development Floodplains Map	3.1-23
3.2-1	Columbia-Waterloo Vicinity Map	3.2-8
3.2-2	Columbia-Waterloo Location Map	3.2-9
3.2-2a	Columbia-Waterloo Soils Map	3.2-12
3.2-3	Columbia-Waterloo Wetlands Map	3.2-12
3.2-4	Columbia-Waterloo Floodplains Map	3.2-12
3.3-1	St. Louis Regional Vicinity Map	3.3-2
3.3-2	St. Louis Regional Location Map	3.3-5
3.3-3	St. Louis Regional Land Use Map	3.3-6
3.3-4	St. Louis Regional Soils Map	3.3-12
3.3-5	St. Louis Regional Wetlands Map	3.3-14
3.3-6	St. Louis Regional Floodplains Map	3.3-14
3.4-1	St. Louis Downtown-Parks Vicinity Map	3.4-3
3.4-2	St. Louis Downtown-Parks Location Map	3.4-5
3.4-3	St. Louis Downtown-Parks Soils Map	3.4-13
3.4-4	St. Louis Downtown-Parks Wetlands Map	3.4-15
3.5-1	Highland-Winet Vicinity Map	3.5-2
3.5-2	Highland-Winet Location Map	3.5-4
3.5-3	Highland-Winet Soils Map	3.5-8
3.5-4	Highland-Winet Wetlands Map	3.5-9
3.6-1	Shafer-Metro East Vicinity Map	3.6-2
3.6-2	Shafer-Metro East Location Map	3.6-4
3.6-3	Shafer-Metro East Soils Map	3.6-8
3.6-4	Shafer-Metro East Wetlands Map	3.6-9
3.6-5	Shafer-Metro East Floodplains Map	3.6-9

LIST OF TABLES

<u>Table Number</u>	<u>Table Number</u>	<u>Following Page No.</u>
2-1	FAR Part 77 Imaginary Surfaces	2-13
3.1-1	Scott Air Force Base Comparative Cost Summary	3.1-8
3.2-1	Columbia-Waterloo Comparative Cost Summary	3.2-8
3.3-1	St. Louis Regional Comparative Cost Summary	3.3-4
3.4-1	St. Louis Downtown-Parks Comparative Cost Summary	3.4-4
3.5-1	Highland-Winet Comparative Cost Summary	3.5-3
3.6-1	Shafer-Metro East Comparative Cost Summary	3.6-3
4-1	Alternative Comparison Matrix	4-1

PREFACE

In 1985 the Department of Transportation, State of Illinois (IDOT), commissioned a study to determine the feasibility of using Scott Air Force Base (AFB) for joint civil/military operations to provide additional commercial air service to Southwestern Illinois. The study, completed in 1986, concluded that such use was feasible.

A public hearing was conducted in the Belleview Area College auditorium and interested parties presented their views and opinions on the advantages and disadvantages of the potential use of Scott AFB. After a review of the study and record of the hearing, IDOT, with funding from the FAA and the Airport Improvement Program (AIP), initiated an environmental assessment and airport master planning study for such possible joint use.

The scope of the environmental assessment and master planning investigation was expanded to include the possible use of other public use airports, a completely new airport and the consequences of a "no-action" alternative in addition to the Scott AFB joint use alternative.

This first phase report of the environmental assessment and master plan study investigates the alternatives, focusing on the technical aspects of the alternatives, their environmental impacts and the potential impacts on the military mission for the Scott AFB alternative.

Three review groups have been established, a technical committee, a policy committee, and a citizens advisory committee. Representatives of the FAA, the USAF, the State of Illinois, the East-West Gateway Coordinating Council, St. Clair County, and the interested public are included on one or more of the committees.

PHASE ONE REPORT
PREPARATION OF A MASTER PLAN
FOR JOINT USE OPERATIONS AT SCOTT AFB, ILLINOIS

1.0 INTRODUCTION

1.1 Purpose

The purpose of the first phase report on the Master Plan and Environmental Impact analysis for the joint military and civil use of Scott Air Force Base (Scott AFB) is:

- (1) Verify the future need for commercial air facilities in Southwestern Illinois to supplement service now being provided by Lambert-St. Louis International Airport.
- (2) Determine the best possible alternative for providing this supplemental service; a new airport, expansion of an existing public use airport, or the joint use of Scott AFB.
- (3) Examine the potential impact on the future growth and development of this region if no action is taken.

This report investigates the potential future demand for air service in the five counties comprising the Illinois portion of the St. Louis Metropolitan Statistical Area and two other adjacent

counties, not in the Standard Statistical Area; compares this demand with the anticipated capacity of Lambert-St. Louis International Airport (Lambert-St. Louis); ranks each of the alternatives for supplying additional capacity on its technical, economic, and environmental merit; and recommends the best alternative for detailed planning and environmental analysis.

Several basic requirements are mandatory. They are:

- (1) The National Defense mission of Scott AFB is not to be compromised.
- (2) The selected alternative must be compatible with the existing and proposed procedures for the allocation of airspace and control of air traffic.
- (3) The recommended alternative must consider adverse environmental results of its implementation and suitable mitigation measures recommended.

1.2 Background

For a number of years there has been concern that the commercial air facilities serving the greater St. Louis metropolitan area might not be adequate to serve the region indefinitely. Recent events, primarily the deregulation of the airlines and the continuing growth of commercial air activity in the transportation of people and goods, have resulted in greater

public awareness of the congestion, delays, and costs due to the lack of capacity of the nation's major airport complexes.

In 1985, the Illinois Dept. of Transportation commissioned a study to determine if it was feasible to share the existing air resources at Scott AFB between military and civil users to supplement the existing capacity of Lambert-St. Louis, the only commercial airport serving the greater St. Louis region. The study was timely in view of a 1984 agreement between the Secretary of Defense and the Secretary of Transportation supporting the joint use concept. While joint use agreements are not new, (there are 23 currently in effect, 12 of which permit virtually unrestricted use by civil aircraft), the growing problems of congestion and lack of suitable land for large new airport complexes, as well as the economic savings to the public, focused attention on this possible alternative solution to individual airport problems.

One of the fastest growing elements of the air system has been that of air freight, particularly the small package carrier. The initial thrust of the feasibility study was towards providing airport capacity for this special air activity as well as the long haul air cargo market. It later became evident that the Southwestern Illinois area could possibly support its own passenger service.

Based on the favorable findings of the feasibility study, the State of Illinois obtained a grant from the U.S. Federal Aviation Administration (FAA) to prepare a master plan and environmental assessment to investigate this potential source of airport capacity in greater depth. This first phase report contains the initial recommendations of the master planning/environmental assessment activity. The report reviews the available capacity of the existing commercial airport facilities, compares this capacity with forecast demand, with special emphasis on the traffic generated in Illinois, defines the gap existing between the two, and reviews the alternatives for closing this gap, including the alternative of taking no action.

This study draws upon previous and ongoing planning efforts to improve the air system in the St. Louis region. Among these are: (1) the studies for a replacement airport for Lambert-St. Louis in the vicinity of Columbia-Waterloo, Illinois; (2) the recently completed General Aviation Systems plan prepared for the East-West Gateway Coordinating Council; (3) the current FAA study on capacity enhancement; (4) the Feasibility Study on the joint use of Scott AFB; and other planning documents relating to socio-economic developments in the area under study.

The Phase I report does not expand on the air cargo aspects of the need for additional facilities. This demand continues as described in the previous feasibility study. However, the recent

(1985-1986) growth in passenger traffic on a Nationwide basis, combined with the restructuring of commercial and commuter carriers has created serious congestion and delay problems at major hubs. This Phase I study examines this future demand for service to the seven county area in Southwestern Illinois to supplement the current services and future demand at Lambert. The Phase I study finds that there is sufficient demand on the Illinois side of the St. Louis Metropolitan Statistical Area to support independent air carrier (commuter) passenger service.

Reference guidelines on airport planning as contained in the FAA Advisory Circulars and Orders, and related Air Force Orders and manuals have been followed. Incorporated in these documents are the regulations issued by the Council on Environmental Quality concerning environmental impacts.

An Executive Summary of this Phase I report summarizes the most significant conclusions of the study.

2.0 AIRPORT REQUIREMENTS AND ALTERNATIVE SOLUTIONS

2.1 Demand-Capacity

This section discusses the potential demand for air service in the St. Louis Region, the capacity of existing airport facilities and alternatives for providing additional capacity.

In 1984 the Office of Technology Assessment, Congress of the United States, issued a report entitled "Airport System Development". The study examined present conditions and future needs of the nation's airports. Airport capacity was identified in the following manner:

"The term capacity refers to the overall ability of an airport to accommodate demand for service. Often, this is expressed in terms of aircraft operations (takeoffs and landings) that can be handled on an hourly, daily, or annual basis. In the broadest sense, however, aircraft operations are not the only aspect of demand that must be considered. The ability of the terminal building to handle passenger flow and the volume of vehicular traffic that can be accommodated on airport circulation and access roads are also important. For aircraft operations, this rate of service is determined by several factors chiefly the layout of the runways,

taxiways, and aprons, the paths through the airspace leading to and from the airport, the rules and procedures for controlling air traffic, the conditions of wind and weather, and the mix of aircraft using the airport. Within the terminal building and on the landside approaches to the airport, the service rate (throughput) is similarly affected by the basic design of facilities and by the characteristics of passenger traffic (ratio of origin-destination passengers to transfers, mode of surface access, etc.). Restrictions of vehicle movement on access roads and at the curbside and bottlenecks at ticket counters, check-in points, baggage handling facilities, and gates all create passenger delay and impinge on the efficiency of the airport operation. Since all of these factors vary over time at a given airport, capacity is not a single, fixed amount but an average figure that represents the typical rate at which demand can be accommodated."

The report highlights where demand will exceed normally accepted delay rates. It goes on to state that, "If FAA's growth projections are realized, the delay costs to airlines could reach \$2.7 billion by 1981 and perhaps twice that figure by 2000."

The recent heightened interest by public officials, airlines, and consumers have resulted in numerous proposals to increase capacity at existing major airports. Different proposals provide different "numbers" on capacity, delay, costs, and services. The fact remains that increasing demands on existing major commercial airports is forecast and physical plant will not be able to keep pace with demand. There are finite limits to the numbers of airplanes, people, offices, warehouses, automobile parking spaces, and associated services that can be accommodated at any one major airport. Physical expansion limitations and environmental considerations preclude unlimited expansion.

The top major generators of air transport demand are multi-airport metropolitan areas. The St. Louis region is one of the very few regions that does not fall into this category.

Expanded use of existing facilities now serving as satellites to the principal airport is an economic answer to providing supplemental service to a region. However, where such satellite airports are in turn, experiencing problems related to growth, transferring new activities to these facilities may not add to the total inventory of airport capacity in a region. However, where facilities are not forecast to reach their capacity levels and meet technical and operational requirements such use is desirable. Thus, capacity enhancement for the entire region within the study area is a major consideration in the final selection of a preferred course of action.

Convenience to the traveler and cost to the traveler, either in time or in travel distance are important considerations. The closer the airport is to the trips origin or destination is a valuable asset in measuring alternatives.

The Scott Air Force Base Feasibility Study indicated that the addition of a runway for civil use at Scott AFB is practical. It is evident that a runway of comparable dimension and strength to the existing military runway would also increase the military capacity at Scott, if ever required. Furthermore, it would provide an alternate runway, at the base, during periods of time when the existing runway might be unusable. The addition of commercial passenger service would reduce costs of ground transportation for military personnel and dependents and air cargo and package carrier service could speed up service of critical material from new sources of supply. Providing commercial service is compatible with military operations. The military mission is enhanced. Sharing of operating costs and maintenance costs and civil use of military services is a further benefit to both parties. Most important however, from a civil aviation standpoint, is the provision of additional civil capacity for the region at a conveniently located satellite airport.

2.1.1 Demand for Air Service

Air travel continues to grow in the United States as the population and gross national produce increase.

In the relatively short time since completion of the Feasibility Study and this Phase I activity, the following pertinent observations can be made:

- The air environment continues to change. While there was a leveling-off of growth in the early 1980's, there has been a rapid resurgence of air traffic in recent years. While package carrier expansion and international cargo continue to grow at a rapid rate, commuter air operations are also increasing dramatically. New longer range and larger commuter aircraft are replacing the small single- and twin-engine piston aircraft. Turbine powered aircraft such as the BAe 146 and the DH-7 and DH-8 are now in operation. Commuter consolidation into national and regional carrier operations provides new market opportunities for independent carriers.
- While there has been no diminuation of the potential for air cargo and package express, the growing importance of "hub and spoke" air carrier operations, which in many ways are more sensitive to local demographic features than is the movement of goods, has changed the focus of the Scott

potential from a "cargo oriented" supplemental service to a more balanced operation of passengers, cargo and corporate and business aviation.

In an effort to determine the magnitude of the difference between capacity and demand for air service, a detailed review of air activity at Lambert-St. Louis was undertaken. Two reports, Appendix A and Appendix B, were compiled. These analyses focus on traffic as it exists today, in terms of numbers of commercial operations, enplaned passengers, traffic distribution by region and other pertinent data. Appendix C includes a report on contacts made with cargo and passenger air carriers.

Forecasts of growth for these same elements which generate air traffic were obtained and comparisons made with national trends and local trends. The results of these comparisons are plotted on Exhibits B-1 through B-42.

However, the focus of this study is to determine the demand for air service that will exist on the Illinois side of the St. Louis CMSA. By the year 1990, the total population of this seven county area will exceed 600,000 with an additional population in the City of St. Louis of over 400,000.

The eastern portion of the St. Louis CMSA would rank alongside the Standard Metropolitan Statistical Areas (SMSA) of Omaha, Raleigh-Durham, Knoxville, Richmond and others, where

scheduled service is provided from local airports. Separated geographically from the St. Louis CMSA, the seven county area could independently support air service. Presently, however, the proximity of Lambert-St. Louis has overshadowed the relatively smaller requirements of this portion of the region.

This situation will continue to exist. The frequency of operations and distribution of services from Lambert-St. Louis will continue to make it an attractive commercial air hub.

Appendix A, Exhibit 2-C plots the past growth and future forecast for air operations at Lambert-St. Louis.

2.1.2 Capacity of Existing and Proposed Airports

As Lambert-St. Louis International Airport (Lambert-St. Louis) is the only airport providing scheduled airline service to the St. Louis area, a review is appropriate to ascertain how well future demand can be met with existing facilities. Appendices A and B review air traffic activity levels and patterns and the capacity/demand relationship. Lambert-St. Louis was experiencing airside congestion in 1981. The congestion has increased since that date.

The FAA's Airport Capacity Enhancement Plan (1987) has proposed certain improvements at Lambert, but at best, these improvements will only provide an incremental increase in overall

capacity. While airside capacity can be improved with the use of larger aircraft on more frequent schedules, current trends in aircraft production indicate that for the next decade new aircraft are being constructed of the mid-size category replacing B-727, DC-9 and B-737 aircraft. Large aircraft, such as the DC-10 and B-747 are not being ordered for the domestic market.

A review of scheduled operations at Lambert-St. Louis supports this observation. Actual operations by large aircraft are declining (see Appendix "A", pp. A-19). The "hubbing operation" which has grown with deregulation and consolidation of carriers such as TWA and Ozark is better served with small or medium sized aircraft scheduled at frequent intervals.

While the very small, primarily commuter airlines are using larger equipment as their markets expand, this does not appreciably reduce airside congestion as these flights are generally associated with connecting scheduled activities.

FAA's capacity studies take into consideration improvements in air traffic control equipment and procedures. While some improvement in capacity will be achieved through technology and produced changes, the benefits will not be sufficient to avoid the congestion that will occur with increased demand over time.

The FAA methodology for calculating airport capacity is contained in the Advisory Circular 150/5060-5, Airport Capacity and Delay. In addition to providing a method for computing hourly capacity, the guidance gives a procedure for computing annual capacity, or Annual Service Volume (ASV). The ASV takes into account a weighting of hourly capacities predicated on how the runways are used and the changing demand patterns and weather conditions throughout the year. The annual service volume for Lambert-St. Louis is 285,000 operations per year. Use of the airport at levels above this volume will produce increasing levels of aircraft delays. When peaking conditions exceed the capacity of the airport, the operations spill over to the next hour. This domino effect results in saturation unless the peaks and valleys are very pronounced. At Lambert-St. Louis, the nature of the traffic does not permit much spill-over to take place without adding to the delay.

For purposes of determining the shortfall which may occur in the future between forecast demand and existing capacity, an operational level of 470,000 operations per year may be considered as a level at which saturation will occur. This is forecast to happen within the near future. According to the FY 1987-2000 Terminal Area Forecasts (FAA) it will occur in 1987.

Efforts continue to increase capacity at Lambert-St. Louis. Planned near term improvements may increase capacity to an annual service volume of 520,000 operations. Further significant increases in capacity would require the construction of a new parallel runway and further expansion of terminal and support facilities. Without such major expansion and with a projection to 640,000 operations per year in 2005, a capacity deficiency of 120,000 operations will occur (see Exhibit 2-C Appendix A). As there are no other commercial airports within the St. Louis CMSA, this gap between demand and capacity can only be filled by introducing commercial service at new locations, either where aviation activity presently exists, or at completely new sites.

The recently completed General Aviation System Plan for the St. Louis region identifies the available facilities and forecasts the growth of these airports in the future. It can be concluded that the use of any of these airports by commercial service will not increase total regional capacity but merely exacerbate the capacity problem at these airports, requiring the construction of new general aviation capacity at a new location. This latter impact is not analyzed in the Phase I report for potential use of Scott Air Force Base (Scott AFB) but should be recognized if the selected alternative supports the conversion of an existing general aviation airport to include commercial service.

The Phase I forecast for commercial service supports the findings of the Feasibility Study. Package carrier service, long-haul air cargo service and supplemental passenger operations through the forecast period can be accommodated by a single runway conforming to FAA standards for an air carrier airport. An airport terminal and other facilities, as described elsewhere in this section of the report, will be required to support the runway operations.

2.1.3 Airport Development Requirements

In order to assess alternatives based on uniform criteria it is necessary to establish a hypothetical set of consistent airport requirements. The hypothetical airport requirements applied in the comparison of alternatives include a location that is easily accessible to the center(s) of demand and a site that is equipped with all of the attendant infrastructure required of a fully operational air carrier airport facility. The airport must be capable of safely and economically accommodating the forecast demand while offering sufficient flexibility to permit future expansion beyond the forecast period without undue impact upon the off-airport environs.

Each alternative site reviewed varies considerably with respect to the existing facilities and resources available for development. As a result, it becomes difficult to ascertain a

general airport layout which may be applied at each site. Therefore, each layout must be site adapted in accordance with the potential land and/or facilities available. For the purpose of this preliminary analysis, the ultimate potential developed site will include the following:

- 1) Primary runway with initial length of 10,000 feet and potential for ultimate length of 12,000 feet.
- 2) Potential for 10,000 foot long secondary runway.
- 3) Approximately 4,000 acres of land.
- 4) Clear approaches to the runway.
- 5) Precision instrument approach installation.
- 6) Standard airside and aeronautical support complexes such as:
 - a) Airfield and approach lighting
 - b) Air traffic control tower
 - c) Meteorological facilities
 - d) Airport access and service roads
 - e) Utilities
 - f) Public and employee parking facilities
 - g) Terminal facilities for passenger, cargo processing
 - h) Crash fire rescue and snow removal facilities

- i) aircraft fueling facilities
- 7) Capability for future expansion beyond the forecast period
- 8) Convenient access to center(s) of demand.

The minimum desirable runway length of 10,000 feet was established in the Feasibility Study for the joint use of Scott AFB, (1). This length was determined as being adequate to serve the air carrier fleet operating over non-stop domestic carrier routes and international air cargo operations located within the continental United States. A future length of 12,000 feet would permit non-stop access to international points by passenger and air cargo operators.

The approach to the airport must be left free from obstructions to permit the safe arrival/departure of all aircraft operating to/from the airport consistent with Federal Aviation Regulations Part 77, Objects Affecting Navigable Airspace.

The imaginary surfaces described in FAR 77 include those described in Table 2-1.

Table 2-1

FAA PART 77 IMAGINARY SURFACES

Primary Surface - - centered on the runway.

Length: 200 feet beyond each end of the runway.
Height: Runway level.
Width: 1,000 feet.

Precision Approach Surfaces - - inclined plane(s) which begins at each end of the Primary Surface.

Length: 10,000 feet (inner length) plus 40,000 feet (outer length).
Width: Increases from 1000 feet at the near end to 16,000 feet at the far end.
Height: Rises at a slope of 50:1 for the first 10,000 feet and runway elevation at the near end and 40:1 for the outer length.

Horizontal Surface - - A horizontal plane 150 feet above the established airport elevation having a radius of 10,000 feet centered on the ends of the Primary Surface.

Conical Surface - - An inclined plane with a slope of 20:1 extending upward and outward from the periphery of the horizontal surface for a horizontal distance of 4,000 feet.

Transition Surface - - begins at each side of the primary and the approach surfaces.

Height: Rises at a slope of 7:1 from runway level (primary surface) to 150 feet. Rises at a slope of 7:1 from the approach surface for a horizontal distance of 4,000 feet.

(1) Feasibility Study for Joint Military-Civilian Use of Scott AFB TAMS/IPAC, April, 1986.

2.2 Alternatives

In the preceding Section 2.1, the need for an airport in Illinois to supplement Lambert-St. Louis was explained, and the requirements defined. In this section, the alternatives will be identified. It should be noted that alternative locations on the west side of the Mississippi River were not considered in that the demand generated in the study area would best be served by locations nearer the center of demand. Alternate locations on the west side of the river would greatly increase ground travel costs and time. The alternatives considered are as described in the following discussion.

2.2.1 Joint Use of Scott Air Force Base

Located in St. Clair County, Scott AFB has been in use as an airport since 1917. Joint military-civil use of Scott AFB is now a better possibility, (1) than it was ten years ago, (2).

2.2.2 Construction of a New Airport (Columbia-Waterloo)

The construction of a new airport has received extensive study, (3). Although the use assumptions have changed from time to time, all of the site selection studies made agreed that if a new airport for air carrier operations were to be built, it should be near Columbia-Waterloo, on a line between St. Clair and Monroe counties. The parameters for a new commercial airport site have not appreciably changed. They still hold true today.

2.2.3 Expansion of an Existing Airport

There are currently no air carrier airports in Illinois near St. Louis. ("Near St. Louis" is defined as Madison, Bond, St. Clair, Clinton, Washington, Monroe and Randolph Counties.) In fact, in these seven counties, there are only six public use airports, that is, airports that are open to the public. Of these, two (Greenville Municipal in Bond County and Sparta Community in Randolph County) are so remote from the center of the area as to be deemed inappropriate from the standpoint of potential service area. Of the remainder, two are publicly owned and two are privately owned. The publicly owned airports are St. Louis Regional and St. Louis Downtown-Parks. The privately owned airports, open for public use, are Highland-Winet and Shafer-Metro East, both in Madison County, (4,5). These sites are shown on Exhibit 2.2-1.

St. Louis Regional:

St. Louis Regional is located 4 miles east of the central business district in Alton, Illinois. The principal runway, 11-29, is 6,479 by 100 feet, with an asphalt pavement. There is an ILS approach to runway 29, and a back course to runway 11. A 5,101 foot crosswind runway, 17-35, is also asphalt paved. The authority has an aggressive expansion program planned, including a proposed 10,000 foot northwest-southeast runway.

St. Louis Downtown-Parks:

St. Louis Downtown-Parks is three miles southeast of the central business district of St. Louis, across the Mississippi River in Cahokia/Centreville, Illinois. The principal runway, 12L-30R, is asphalt paved and 5,499 feet long. The secondary parallel runway, 12R-30L is 3,800 feet long. There is also a 2,799 foot crosswind runway, 4-22. There is an ILS approach to Runway 30.

Highland-Winet:

Highland-Winet Airport is about three miles north of Highland, Illinois. Expansion of the longest 2660 feet turf runway is limited on the north by Interstate 70 and on the south by U.S. 40. Consequently, for this analysis, a new site, south and east of the existing site, has been identified.

Shafer-Metro East:

Shafer-Metro East is east of Troy, Illinois, about two miles northwest of St. Jacobs. It has a single asphalt runway, 2600 feet long.

2.2.4 Do Nothing

One alternative of course is to do nothing. This course makes sense only if the positive effects of providing a solution to a problem do not outweigh whatever negative consequences are associated with the solution.

This Phase I report assesses all alternatives. However, in assessing the alternatives and finding the "no-action" alternative to be less desirable, an over-riding consideration must be evident if the compatible use of an under-utilized existing resource is rejected. Scott AFB, in terms of aeronautical activity is such an underutilized facility and generally conforms to FAA air carrier standards. The other alternatives do not meet these criteria but are analyzed in this study to support the comparative rankings.

FOOTNOTES

- (1) Department of Transportation, State of Illinois, Feasibility Study for Joint Military-Civilian Use of Scott Air Force Base, April 1986.
- (2) U.S. Department of Transportation, Federal Aviation Administration, NEW AIRPORT FOR ST. LOUIS METROPOLITAN AREA, Final Environmental Impact Statement, (FEIS) September 1976, page 4-6.
- (3) FEIS, Op. cit.
- (4) St. Louis Metropolitan Area Missouri-Illinois General Aviation System Plan, Working Paper I, August 1983.
- (5) Scott Air Force Base Master Plan Study, Inventory Report, February, 1987.

3.0 ANALYSIS OF ALTERNATIVES

3.1 Scott Air Force Base

3.1.1 Institutional Issues

Joint Use

The basic framework of the draft Agreement for Joint Use of Scott Air Force Base (Scott AFB) is derived from a thorough study of several civil-military joint use agreements now in effect. Provisions have been tailored to meet the special requirements relevant to civil operations at Scott AFB. The essential ingredients of the draft Agreement which apply to civil use of Scott AFB are outlined in the following discussion.

The Government would authorize joint use of the military runway/taxiway complex and related facilities at Scott AFB for civil aircraft operations in four functional categories for a period which coincides with the duration of the land lease. Commencement of civil operations by the Sponsor would be prohibited prior to construction of specific items to include runway/taxiway upgrades, civil terminal facilities and parking ramps, separate public access road, and adequate vehicle parking areas. Siting and construction plans are to be coordinated with the United States Air Force (USAF) and will conform to Air Force construction standards. The qualifications, capabilities and

requirements of civil aircraft and pilots, as well as restraints on and limitations of civil aircraft use, are covered in detail. USAF costs for operation and maintenance of joint use facilities would be reimbursed by the Sponsor on a pro-rata basis of usage. Government costs for providing emergency fire fighting and crash rescue services would be reimbursable by the Sponsor with no obligation on the part of the Government to increase personnel or equipment to provide such services. The Government would not be responsible for emergency servicing or maintenance and would be held harmless for loss or damage to property or for injury to persons arising from civil operations. The Sponsor would be required to hold liability insurance and would agree to indemnify and save harmless the Government for loss, damage or injury caused by civil use. The Sponsor would also be obligated to maintain pavements in easement areas, to correct any erosion, dust or other nuisance created by Sponsor's use, and to comply with all requirements for control of air, water and noise pollution as well as solid waste disposal. Specific conditions would be established for priority of military operations.

Security

The draft Airport Security Plan for Joint Use of Scott AFB was developed after consultations with military authorities at Scott AFB, with numerous FAA security specialists, and with current airport directors familiar with joint use operations. The

draft also encompasses relevant security provisions contained in the 375th Aeromedical Airlift Wing Base Resources Protection Plan and all FAA security regulations which pertain to both airport operations and airlines operators.

The draft Airport Security Plan verbally and graphically describes the proposed separate and distinct areas of civilian operations at Scott AFB to include designation of Air Operations Areas (AOAs) which are the civilian equivalent of military flightlines. The draft plan includes a discussion of the most pertinent concerns of military security, and provides the procedures, restrictions and barriers to accommodate protection of Government resources at Scott AFB. These concerns and procedures cover the following subjects:

- Separation of Civil Aviation Operations
- Level of Activity for Civilian Operations
- Description of the Civilian Area
- Restrictions of Public Access to Military Resources from the Groundside of the Civilian Area
- Restrictions of Access to Military Resources from the Airside of the Civilian Area
- Restrictions of Access by Temporary Construction Workers and Airport Employees to Military Resources
- Vehicle Control and Identification
- Airport Security Structure, Authority and Training
- Communications and Alert Systems
- Terrorism, Hijacking and Bomb Threats

- Navigation and ATC Facilities

Guidance for establishing adequate security during joint use of Scott AFB is presented through a list of recommended procedures and barriers which address the following subjects:

- Designation and Security of Air Operations Areas
- Identification of Persons
- Identification of Ground Vehicles
- Fencing
- Gates
- Security Lighting
- Locks and Key Control
- Critical Areas (Other Than Air Operations Areas)
- Law Enforcement and the Airport
- Security Education
- Security Committees
- Liaison
- Airport Security Survey

The final text of the Airport Security Plan will be patterned after the "Sample Airport Security Program," an FAA document which will be forwarded to the airport sponsor by the FAA regional security office at the appropriate time. Until the design for construction of civilian facilities has been approved, it is premature to list in specific detail all the procedures to be included in the security plan. However, all relevant subjects

have been covered generically in the draft Airport Security Plan.

3.1.2 Technical Issues

Airspace/Obstructions

Scott Air Force Base is approximately 26.6 nautical miles (NM) from Lambert-St. Louis International Airport (Lambert-St. Louis) and about 3NM northeast of the extended centerlines of the Primary Parallel Runways 30L-30R at Lambert-St. Louis.

Low meteorological conditions (bad weather) requiring flight and approaches to landing by sole reference to instruments (versus visual reference) under Instrument Flight Rules (IFR) are accommodated at Scott AFB by a published Precision Approach Radar (PAR) procedure, a highly accurate military version of the standard civil precision instrument approach system in use across the country, except that it requires only two-way radio communications between the ground controller and the aircraft/pilot. In a PAR approach, the ground controller literally talks the pilot down.

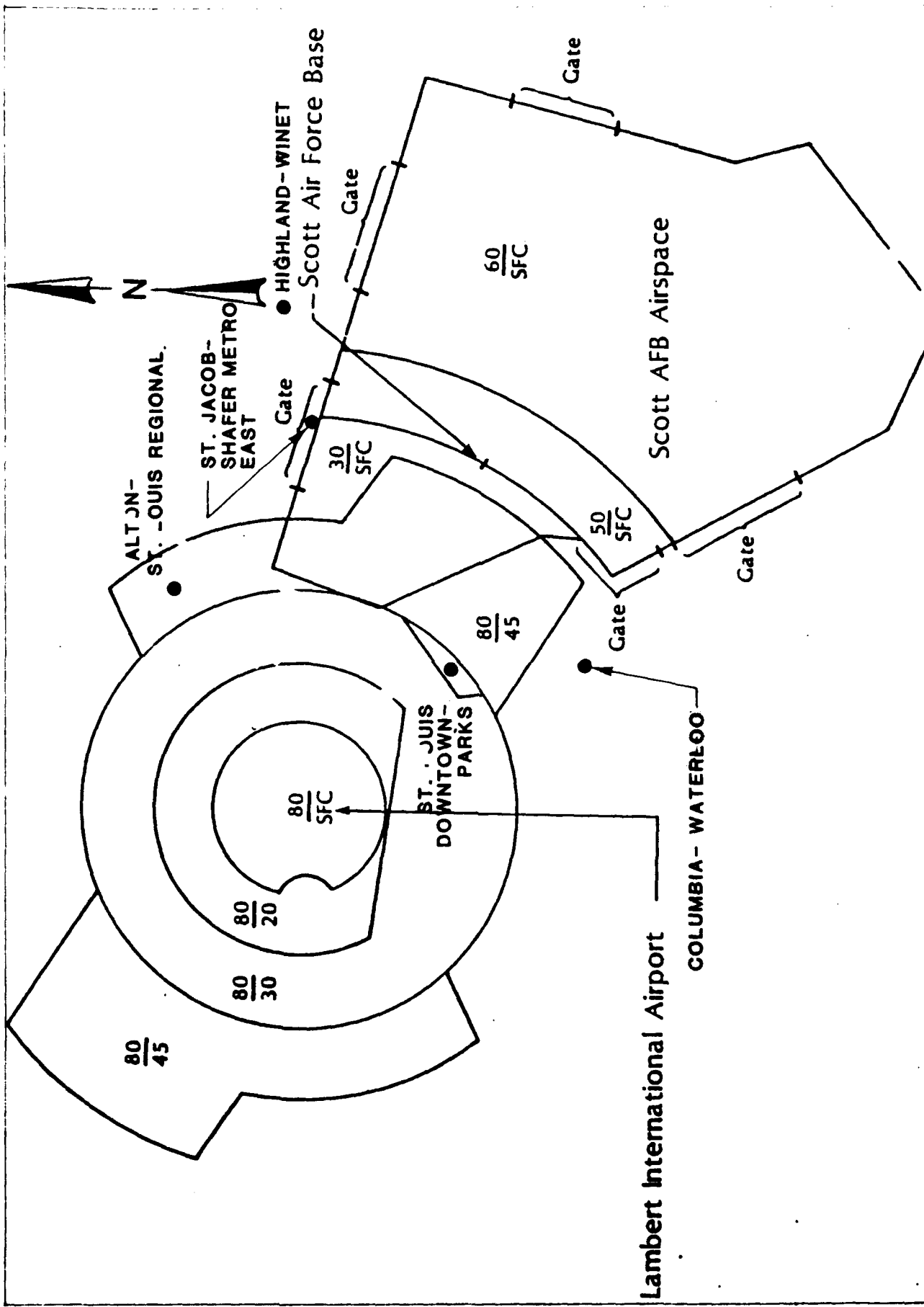
Scott AFB is also equipped with a standard civil, precision instrument approach installation, Instrument Landing System (ILS), which requires functioning navigational/approach radio receivers and position indicators (instruments) in the aircraft to receive and display the electronic horizontal and vertical guidance

signals which are transmitted from ground based equipment.

Scott AFB is located outside the St. Louis Terminal Control Area (TCA) as depicted in Exhibit 3.1. IFR operations and approaches at Scott AFB are currently conducted independently of the Lambert-St. Louis TCA. It is feasible that both civil and military operations can be conducted out of Scott AFB without infringing upon the Lambert-St. Louis TCA, (1).

There are no known obstructions to the civil runway location and orientation as presented in the earlier referenced feasibility study for the joint use of Scott AFB. The civil runway concept depicted in the feasibility study avoids penetration of the approach slopes by both natural and manmade obstructions. There are no known violations of FAR Part 77 Imaginary Surfaces as depicted in Table 2-1.

There may be obstructions associated with the joint use of the existing Runway 14-32 at Scott AFB. The current threshold is displaced to clear a rail line located just off the approach end of Runway 32. There may also be a manmade obstruction (barn roof/steeple) in the transitions to the approach end of Runway 14 at Scott AFB. These potential Part 77 obstruction issues will have to be addressed/resolved should this site be selected for further consideration.

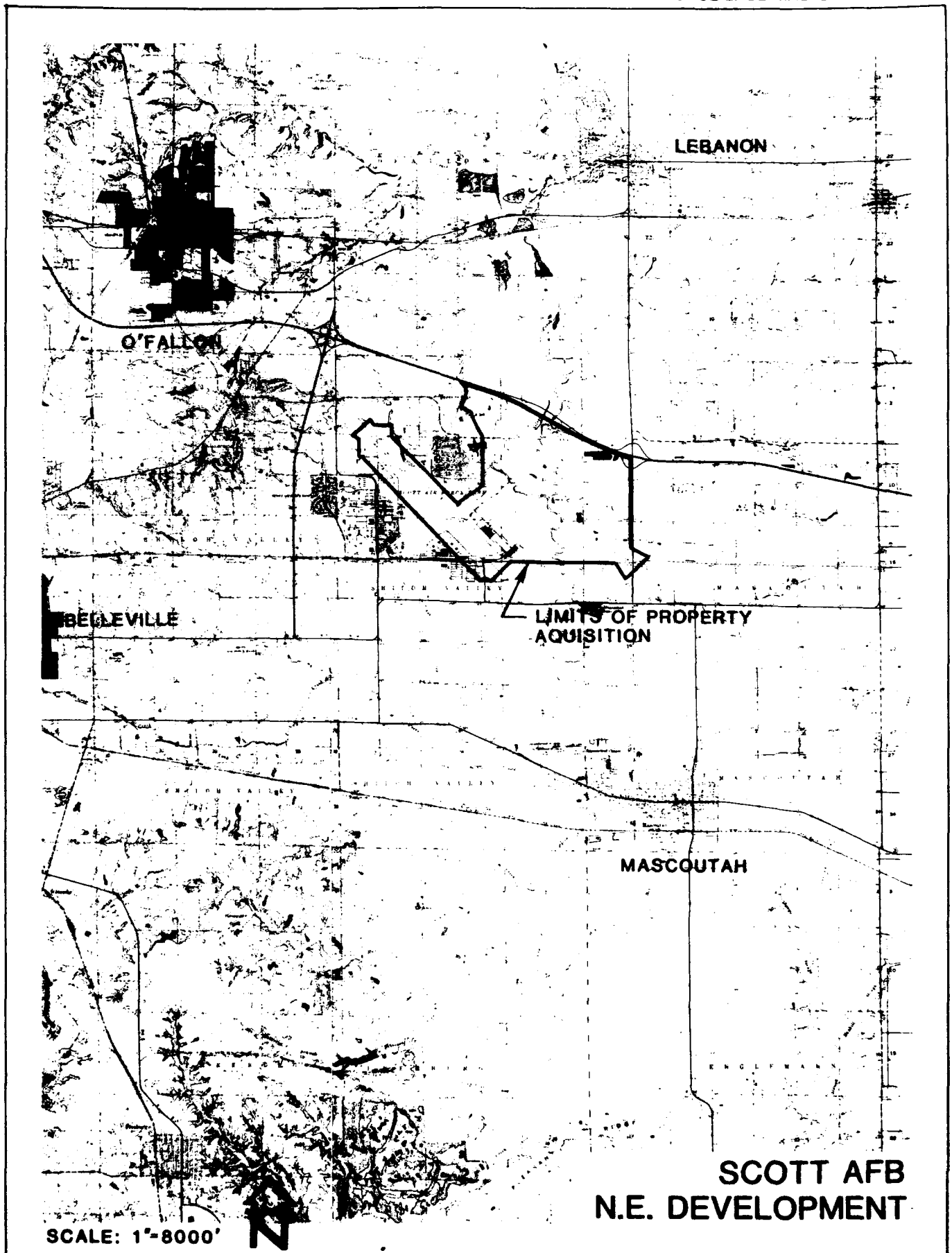


LAMBERT-ST. LOUIS INTERNATIONAL AIRPORT/
SCOTT AIR FORCE BASE AIRSPACE (4/86)

Airport Development Requirements

For the purposes of this study, the development requirements for the joint use of Scott AFB will remain essentially the same as those presented in the earlier feasibility study, (2) and as presented in the general discussion of the development requirements in this report. The proposed site is depicted in Exhibit 3.1-1. To summarize the earlier study, the development requirements will entail the construction of a new runway running parallel to the existing runway at Scott AFB and sufficiently offset from the existing runway as to permit simultaneous operations of aircraft on both runways during periods of low inclement weather. To accomplish this, Silver Creek will have to be crossed in several places. This will require a concerted wetlands and floodplains mitigation effort.

While it is not within the scope of this phase of the study to go into great engineering detail associated with any site, it is apparent that in the course of bridging Silver Creek and the floodplain to construct the future parallel runway, impacts to the floodplain and wetlands will have to be fully addressed. It is anticipated that the bridging of Silver Creek will result in improvements to flooding characteristics of the floodplain with resultant relocations in downstream flooding impacts. This will be investigated in detail in subsequent phases of this project should this alternative warrant further study.



The major advantage of this site with respect to facility requirements is the potential use of the existing facilities associated with the active Air Force base. While the joint use agreement will ultimately require the construction of another runway to maintain the integrity of the U.S. Air Force mission as the civil traffic grows in annual operations, the effective result is two air carrier calibre runways for the price of one, with an interim benefit of defraying the high initial cost of acquiring land and constructing a new runway and terminal area utility system, just for the initial (startup) civil use facility. In addition, the total acreage requirements are less due to the potential joint use of the existing Air Force airside property.

Capacity

The addition of a new runway for air carrier operations will also open the existing runway for commercial operations. The capacity will be about 100 IFR operations an hour, less the military operations. Area wide general aviation capacity will not be affected.

3.1.3 Economic Issues

Cost of Construction

The relative cost comparison summary for the proposed alternative sites, shown as Table 3.1-1, is the result of a cost

COMPARATIVE COST SUMMARY USING SCOTT AIR FORCE BASE
AS A BASE OF REFERENCE

DEVELOPMENT ITEM	SCOTT AIR FORCE BASE	COLUMBIA- WATERLOO	ST. LOUIS REGIONAL	ST. LOUIS DOWNTOWN-PARKS	HIGHLAND- WINET	SHAPER- METRO EAST
1. LAND ACQUISITIONS	\$ 4M	S	H	H	S	S
2. SITEMARK	\$24M	S	L	L	S	S
3. WETLAND MITIGATION	\$21M	S	L	L	L	L
4. PAVEMENTS	\$69M	S	S	S	S	S
5. STRUCTURES	\$63M	S	S	S	S	S
6. LIGHTING & NAVAIDS	\$10M	S	S	S	S	S
7. ACCESS	\$ 6M	S	H	H	S	S
8. MISCELLANEOUS	\$15M	H	S	S	H	H
9. TOTAL	\$217M	S	S	H	S	S

* Based on Feasibility Study for Joint Military-Civilian Use of Scott Air Force Base, April 1986.

S - Same Approximate Cost L - Lower Approximate Cost H - Higher Approximate Cost

comparison analysis of facilities construction at the various alternative sites based on the estimated capital costs for the Scott AFB development presented in the 1986 Feasibility Study, (3). The extent to which these relative costs vary is a function of each site and the adaptability of any existing facilities currently available for use.

The relative cost comparison of each development item has been devised using order of magnitude cost estimates which were developed with Scott AFB as the standard. For planning purposes, the cost comparison of each development item as well as the total for each site has been expressed in the table as Higher (H), Same (S), and Lower (L) with respect to Scott AFB. The approximated costs for the alternatives as compared to Scott AFB are identified as costing higher or lower only when the approximated difference is significant.

The cost comparison analysis of Scott AFB in the referenced feasibility study reflects comparatively low costs for land acquisition, access and miscellaneous costs as generally compared with the other alternatives. With the exception of the Columbia-Waterloo alternative, wetland mitigation costs at Scott AFB are significantly higher than the rest of the alternatives. The estimated costs for airfield paving, lighting, Navaids and structures are essentially the same for all of the alternatives.

Due to the availability of existing infrastructure to support the initial civil use of Scott AFB, the initial costs are substantially lower than the other alternatives.

3.1.4 Environmental Issues

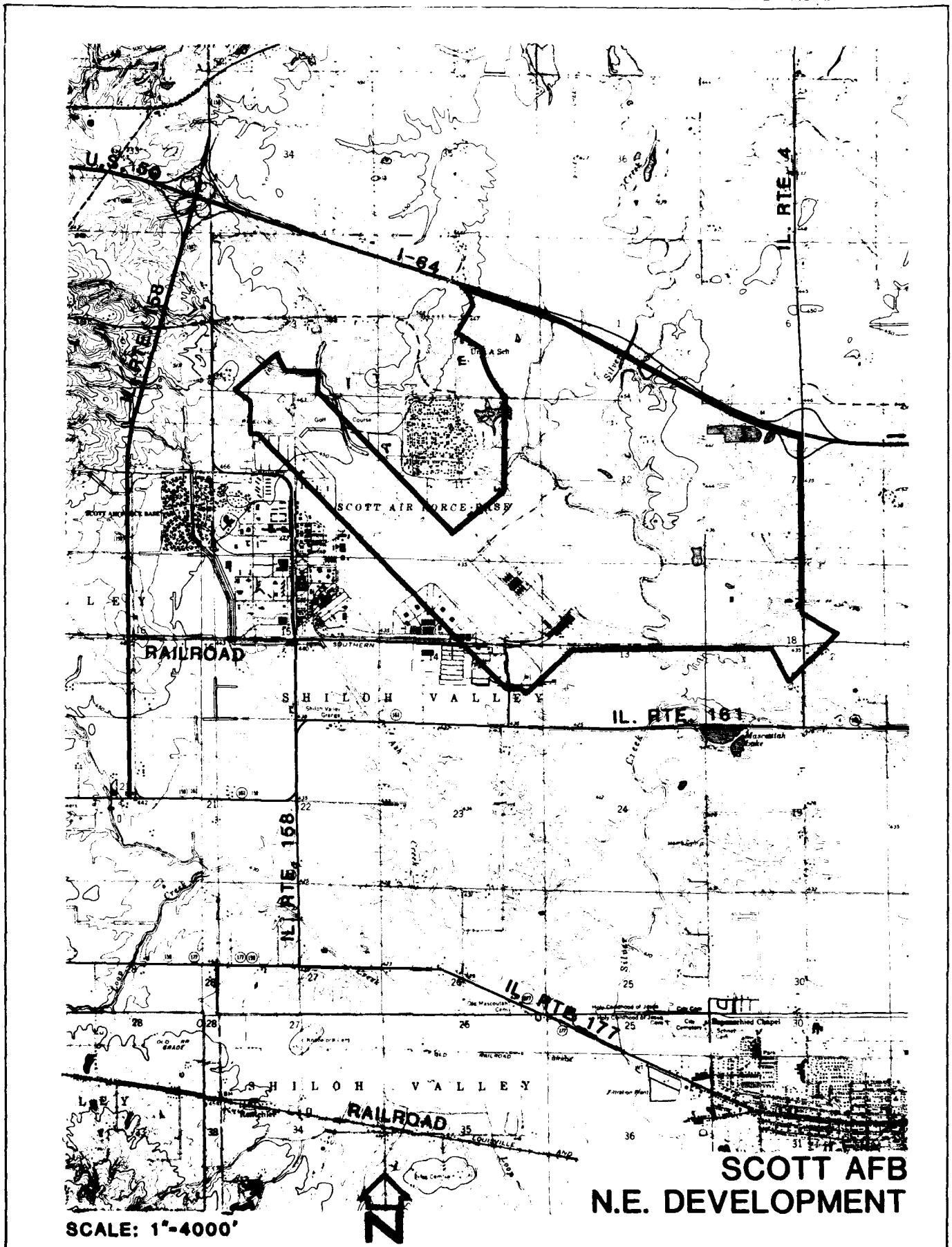
Land Acquisition

The Scott AFB joint use proposal site is comprised of approximately 3,900 acres of land to serve the needs of the future airport. Twenty-four hundred (2400) acres makes up the current base leaving approximately 1500 acres of land acquisition. Of the 1500 acres to be acquired under this proposal, approximately 500 acres are located within the Silver Creek Floodplain. The proposed layout for the expanded Scott AFB is shown in Exhibit 3.1-2.

General land features have been identified within this shape. They include primarily existing Scott AFB development such as airfield facilities. Approximately 17 rural residential dwellings appear in the 1500 acres being considered for acquisition.

A portion of Silver Creek, scattered streams and woodlands also appear on the eastern side of the proposed site area.

As the study progresses, a decision will need to be made as to which site will undergo a detailed noise analysis. If Scott AFB is the recommended site, more dwelling units could be included



based upon the location of the proposed 75 Ldn contour line.

Noise

When, after 2005, the total civil operations exceed 100,000 annually, the 65 Ldn contour will extend about 25,000 feet northwest from the runway end, turning toward the north to avoid O'Fallon. The 65 Ldn contour extends about 26,000 feet to the southeast. The widest part of the contour (about 8000 feet) is near the northwest end of the runway, tapering in both directions. Consequently, all of the Wherry housing is in the area of 65 Ldn or greater. In addition, there are approximately 25 farm residences between 65 and 70 Ldn, 15 between 70 and 75 Ldn, and 4 within the 75 Ldn contour. Further, approximately 55 trailer homes are between the 65 and 70 Ldn contours. In addition, two schools are located at points where daytime noise levels can be expected to exceed 75 Ldn, (4). A discussion of the meaning and significance of Ldn will be found in Appendix D.

Compatible Land Use

The Scott AFB site (see Exhibit 3.1-2) represents an existing development of considerable size which has already operated at a substantial level of activity. Adjacent lands include agricultural, residential, and open lands, including the floodplains of Silver Creek.

Noise studies indicate that uses from existing and proposed facilities would slightly impact residential use and two existing schools. Land use issues could include impacts due to converting agricultural lands and developing potentially sensitive areas adjacent to the site.

Use of the existing runways could be accommodated with minimal additional impact on existing land uses except for increased operational noise. The addition of a new runway (with attendant taxiways, etc.) will create most of the anticipated land use problems. Included considerations are:

1. Treatment of existing on-base family housing (residential) areas which could be located between parallel runways.
2. Potential need to relocate an existing school in the path of the proposed runway view.
3. Sizable impacts associated with construction and disruption of floodplains and wetlands. These land use problems stem more from the actual location of the runway than to increased air activities at this site.

Historical and Archeological Locations

The Scott AFB area summarized below includes the cities and surrounding areas of Belleville, O'Fallon, Lebanon, Freeburgh, Mascoutah and Shiloh. These areas have been inventoried for historic landmarks, architecture and structures which are or may be eligible for nomination to the National and State Registers of Historic Places, (5). The following information is an attempt to quantify the existence of structures of historic and/or pre-historic significance in the general area. No determinations or opinions were rendered by the staff of the Illinois Historic Preservation Agency, pertaining to the eligibility of these sites for national or state registrations.

Historic Landmarks, (6)

- 62 Residences
- 7 Churches
- 31 Buildings
- 4 Schools
- 1 Library
- 1 Seminary Site
- 1 Prehistoric Village Site
- 2 Tavern/Saloon

109

Historic Architecture (Before WW II), (7)

- 145 Residences
- 5 Churches
- 17 Buildings
- 1 School
- 2 Tombs
- 1 Arbour

171

Historic Structures, (8)

52 Residences
8 Churches
20 Buildings
2 Schools
1 Hospital
83

Total 363 Sites

If the study of joint use of Scott AFB is pursued, the effect of such development on these sites will be evaluated.

The following information regarding potential archeological sites was available from a previous study:

"No known archaeological sites exist on Scott Air Force Base property. Four known prehistoric sites exist on the bluffs of Sugar Creek in the area east of Scott Air Force Base. None of these sites would require preservation in place. It may be possible to go into a Phase II dig for exploration of any sites unearthed during construction", (9)

In addition: "The long term plans for Scott AFB expansion would disturb substantial areas of floodplains, floodplain edges and wetlands which have a reasonably high potential to have archeological significant artifacts or sites. This finding is based on the Southwestern and Metropolitan Area Planning Commission's 1973 Open Space and Historic Site Preservation Study. The study identifies the Silver Creek drainage way as an "Archaeological Area". This designation is due to the presence of

a pre-columbian (1673) Indian mound known as the Emerald Mound in the upper reaches of Silver Creek north of I-64. The presence of this site could affect the Silver Creek drainageway as follows:

1. The mound suggests relatively intensive Indian activity in the area, and source of water was a prime location for habitation or concentrated use.
2. Artifacts associated with the mound or upland activities may have been washed downstream and been deposited in the floodway over many years," (10).

Any proposed alteration or work within the floodplain, adjacent areas, and wetlands should be covered with the standard clause to halt excavation or construction, to notify the proper authorities such as the state historic preservation officer, and to allow the opportunity to investigate the site should archeological resources be uncovered.

Department of Transportation Act, Section 4(f)

Section 4(f) of the Department of Transportation Act provides for the protection of parks, recreation areas, wildlife refuges and historic sites from use for transportation facilities.

It appears that no 4(f) land is in the proposed Scott AFB site area as shown on Exhibit 3.1-2.

Endangered Species

No State or Federally listed endangered or threatened species are known to reside on either the existing or proposed site. All three vertebrate species (Snowy Egret, Egretta thula; Black-crowned night heron Nycticorax nycticorax; Little blue heron Florida caerulea); listed for the county are marsh and water-oriented bird species from the Mississippi River bottoms, approximately 20 miles to the west; thus no direct effect on them is expected. An indirect effect is possible in that individuals of these species may occasionally forage in the inundated forest along the Silver Creek drainage, south of the runway site and extending beyond the project area. This usage has not been verified, and effects would likely be minimal.

This site is within the distribution range of the Indiana Bat (Myotis sodalis), a State and Federally listed endangered species. However, no Indiana Bats are known to reside in the project area.

Several of the listed endangered or threatened plant species may possibly be found in the bottomland forests now on Scott AFB property and/or in the immediate areas which are scheduled to be cleared or filled. Since no complete survey by knowledgeable persons has been made of these lands, intelligent predictions cannot be made. Several other plant species listed for St. Clair County are bluff prairie and drysite species. These are not

expected to have ever been found in the proposed development area.

Biotic Communities

The primary area to be lost at this location is a moist bottomland forest of average quality, encompassing from 600 to 1200 acres, depending on decisions made on construction methodology and protective measures utilized. Two secondary areas will also be affected. The first includes 600 to 800 acres of farm-field and fence row habitat which provides above average wildlife needs for the area. Fields are not completely clean-tilled; some brushy corners and borders are maintained; considerable edge is present. Hunting for upland small game is good in this area. The other area affected is the downstream drainage of Silver Creek. Currently, this is a typical, seasonally flooded forest of above average wildlife value. Pond communities are common in some areas. Wildlife values here are likely to be diverse and represent a relatively scarce resource for the area. The extensive upstream earth moving activities may be expected to cause severe siltation in all downstream communities for many miles. The riverine values are of unknown quality.

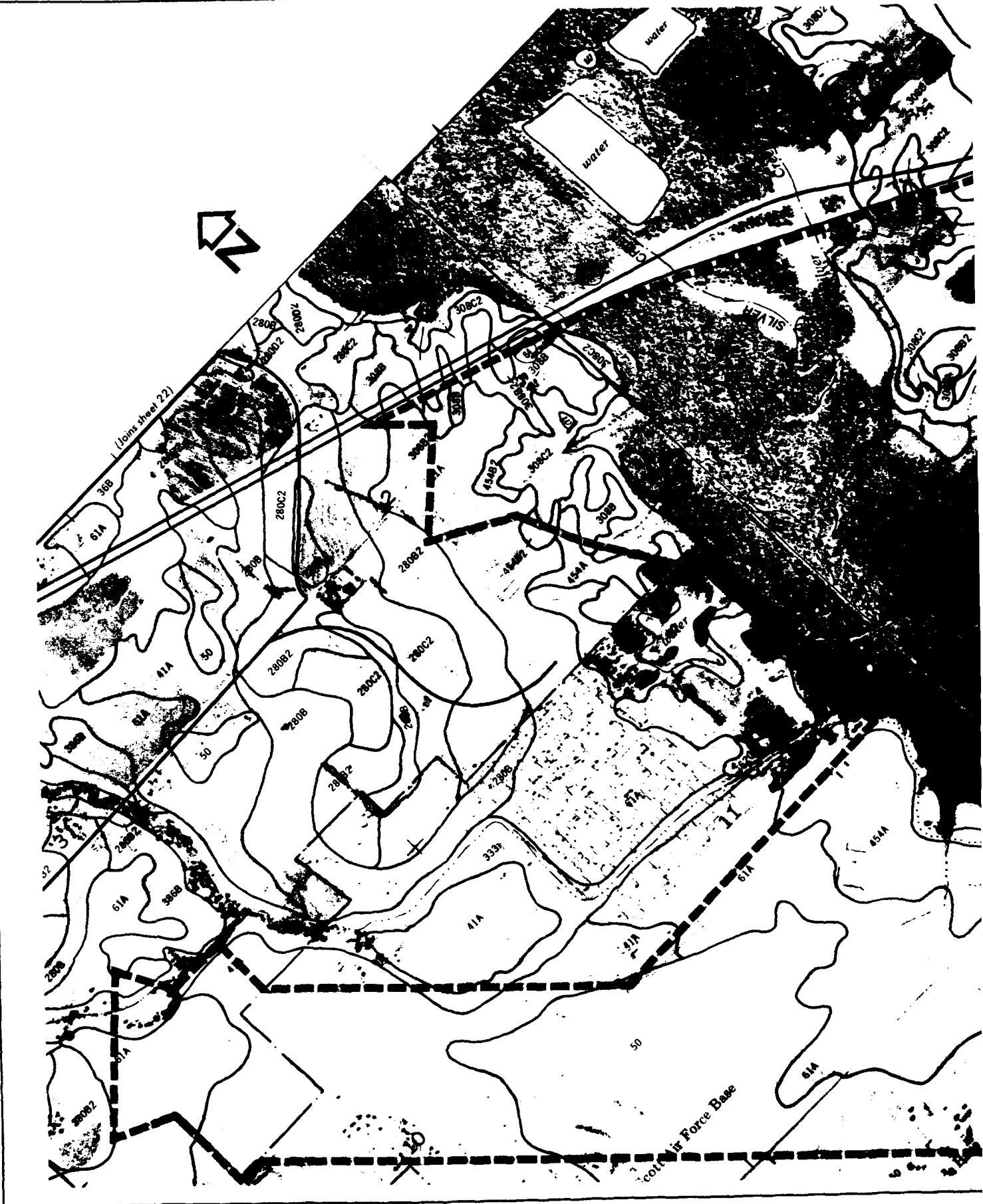
Farmlands (See Exhibit 3.1-3)

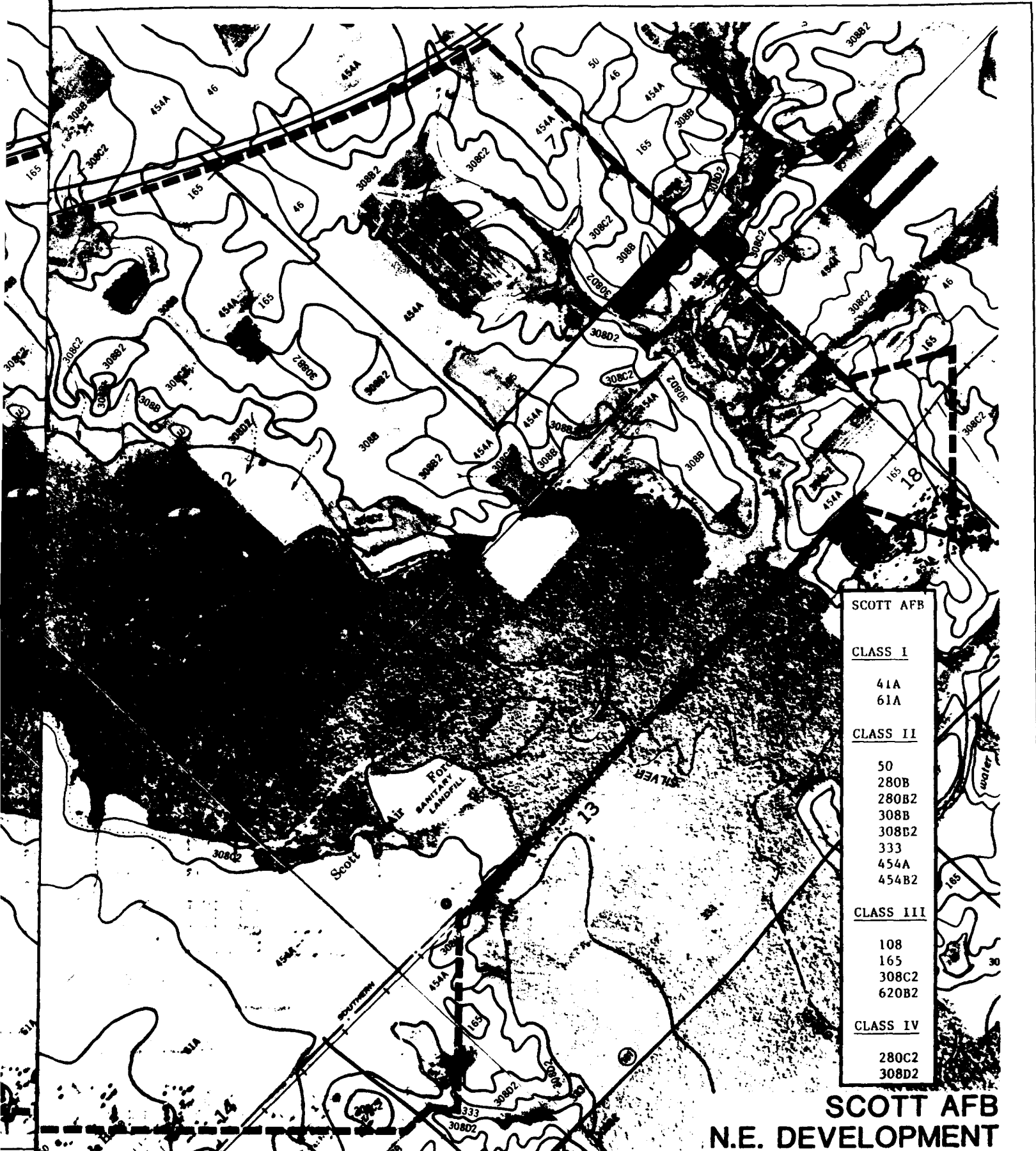
It is USDA Soil Conservation Service's policy to make and keep current an inventory of the prime farmland and unique farmland of the United States. This inventory is to be carried out in cooperation with other interested agencies at the national, state, and local levels of Government. The objective of the inventory is to identify the extent and location of important rural lands needed to produce food, feed, fiber, forage, and oilseed crops. Prime farmland is land that has the best combination of physical and chemical characteristics for economically producing sustained high crop yields. Unique farmland is land other than prime farmland which has the special combination of soil quality, location, growing season, and moisture supply to economically produce sustained high quality and/or high yields of a specific crop.

The predominant land use surrounding Scott AFB is farming. These lands generally have gentle slopes and so contribute to farmland categories. The soils east of Silver Creek floodplains and west of IL Route 4 are active farmlands totalling 1,000 acres. Approximately 98% of the soils are Class I, II and III lands. The approximate distribution of the prime class is as follows:

Class I - 15%

Class II - 73%





SCOTT AFB
N.E. DEVELOPMENT

Class III - 10%

Class IV or below comprise the remaining 2%.

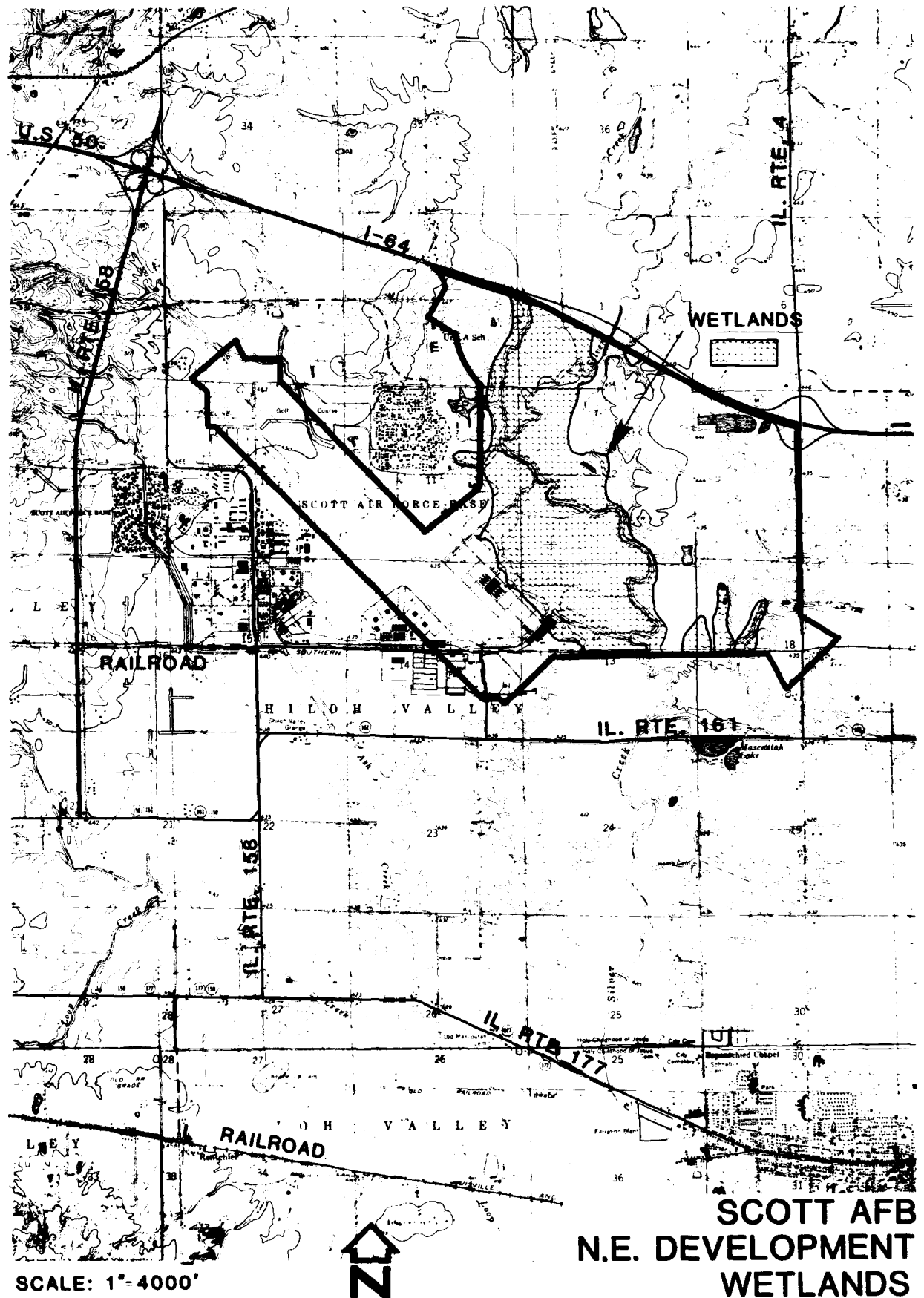
Appendix E of this report further defines the eight soil classes and identifies those specific classes within St. Clair County.

Wetlands (See Exhibit 3.1-4)

The U.S. Fish and Wildlife Service's definition of the term "wetland", adopted in 1980, is as follows:

Wetlands are lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or land is covered by shallow water. For purposes of this classification, wetlands must have one or more of the following three attributes: (1) at least periodically, the land supports predominantly hydrophytes, (2) the substrate is predominantly undrained hydric soil, and (3) the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the growing season of each year.

The Corps of Engineers, U.S. Environmental Protection Agency, the FAA Order 5050.4A "Airport Environmental Handbook", and Executive Order 11990 dated May 24, 1977 defines a wetland as an area that is inundated by surface or ground water with a frequency



sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas. As can be seen by the above comparisons, all Federal definitions of wetlands are similar. Three criteria (hydrophytic vegetation, hydric soils and wetland hydrology) are used in identifying wetland area. While the Corps of Engineers and the U.S. Environmental Protection Agency require all three wetland criteria to be present before considering an area as wetlands, the U.S. Fish and Wildlife Service does not require all three. Although the vast majority of all inland wetlands meet all three criteria, an effort to identify those wetlands defined by the U.S. Fish and Wildlife Service has been made to assure compliance with all regulatory federal agencies concerning wetlands.

The FAA's Airport Environmental Handbook continues to describe similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds. "Wetlands are important fish and wildlife habitats. They directly and indirectly supply food to a large array of animals including microorganisms, invertebrates, fish, birds, mammals, and reptiles. Wetlands purify water by filtering out suspended matter and utilizing dissolved nitrogen and phosphorus for plant growth and

development. They may provide flood control by storing and detaining storm water. Freshwater wetlands often function as ground water recharge areas," (11).

The proposed development within inventoried wetlands areas will require a permit under Section 404 of the Clean Water Act. This permit and the State of Illinois 401 certificate are required to satisfy the state's wetlands filling requirements. To support the application for permit, a complete on-site biota and natural resources inventory will be necessary. The impact analysis based on these data will address the following:

1. Wetlands filling.
2. Hydraulic and water quality implication of wetlands filling.
3. Aquatic ecology.
4. "Endangered" plant and animal species.
5. Relative impact of alternatives.
6. Mitigation of unavoidable impacts (i.e. by aiding the existing USDA Soil Conservation Service's program and retaining storm water runoff on airport property and mitigating the loss of wetlands).

The short term runway expansion, installation of a parallel taxiway, and construction of airport facilities will directly impact approximately 40 acres of wetlands on the westerly side of the Silver Creek channel.

The long term impact on wetlands will occur with the construction of a new parallel runway, positioned 14 L-32 R, located 6500 feet eastward from the existing runway. The new runway itself will not lie within the Silver Creek wetlands except for the area near the northerly runway terminus; however, the associated taxiways and the terminal complexes will almost exclusively lie within the wetlands area. As a result, total construction will involve significant wetlands filling.

Due to the expansion of terminal and airfield facilities, approximately 130 acres of wetlands will be filled between the existing runway and the Silver Creek channel. Connecting taxiways, approximately 1500 feet long, will be constructed across the Silver Creek channel and the remaining wetlands. These taxiways will occupy approximately 5 acres. In the area of the northerly terminus of the new runway, the Silver Creek channel will be bridged and approximately 15 acres of wetlands will be filled.

The new access roads to connect the airport terminal with Interstate Route 64 will impact approximately 5 acres of wetlands.

Except for the channel area, the majority of wetlands affected is forested area with brief periods of flooding. Within the general channel area, the wetland is classified as riverine, lower perennial, permanent, with an unconsolidated bottom.

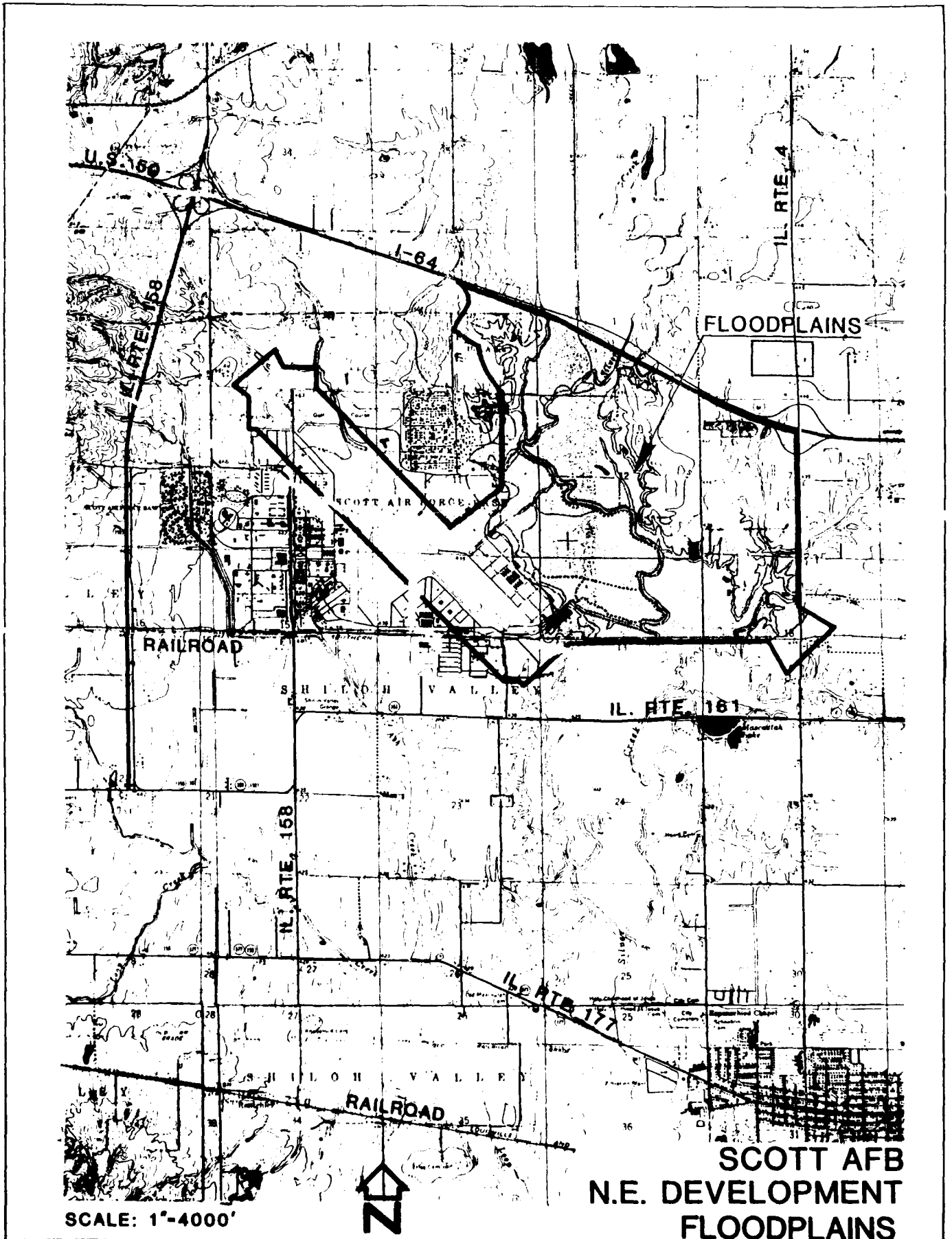
A site map depicting the minimum limits of property acquisition and wetlands limits, (shown shaded), is included on the attached Exhibit 3.1-4, (12).

Floodplains (See Exhibit 3.1-5)

The short term runway expansion, installation of a parallel taxiway, and construction of airport facilities will directly impact approximately 45 acres of floodplains lying along the westerly side of Silver Creek.

The long term impact on floodplains will occur with the construction of a new parallel runway, positioned 14 L/32 R, located 6500 feet eastward from the existing runway. Most of the new runway itself will be located near the fringe of the easterly floodplain boundary, except for the area near the northerly and southerly runway termini, however, the associated taxiways and the terminal complexes will involve filling most of the westerly floodplain.

Due to the expansion of terminal and airfield facilities, approximately 200 acres of the westerly floodplain will be filled



between the existing runway and the Silver Creek channel. Connecting taxiways, approximately 1500 feet long, will be constructed across the Silver Creek channel and the remaining floodplain. These taxiways will occupy approximately 5 acres. In the area of the northerly terminus of the new runway, the Silver Creek channel will be bridged and approximately 20 acres of floodplain will be filled. The southerly runway terminus will occupy approximately 30 acres of floodplain. The new access roads to connect the airport terminal with I-64 will impact approximately 10 acres of floodplain.

The long term development will require permits under Sections 401 and 404 of the Clean Water Act and appropriate State and local floodway permits. A site map depicting the minimum limits of property acquisition and floodplains limits, (shown shaded), is included on Exhibit 3.1-5, (13).

Access (See Exhibit 3.1-2)

Scott AFB is located in central St. Clair County approximately 7 miles northeast of Belleville and 20 miles southeast of downtown St. Louis. Primary access to this site is currently provided by four highways which surround the base. These highways are:

- IL Route 4 on the east.
- IL Route 158 on the west.
- IL Route 161 on the south.
- Interstate 64 (U.S. Route 50) on the north.

The Belleville area, to the southwest of the site, is the major population center currently dependent on local access, which is afforded by IL Routes 158 and 161, providing a direct east-west connection.

Being adjacent to Interstate 64 with interchanges on both the east and west sides, access to an expanded facility is good. Scott AFB is also located near the geographic center of the total study area and in close proximity to the major population centers of the metro east area.

Socio-Economic Impacts

The socio-economic conditions in the St. Louis Metropolitan Statistical Area which includes the Illinois counties of Clinton, Jersey, Madison, Monroe and St. Clair continue to indicate some strengths in U.S. Department of Commerce, State of Illinois and East-West Gateway projections. However, the area does lag the U.S. average forecast for population growth and per capita income growth. For example, between 1983 & 2005, U.S. population will grow a total of 18% with a 42% per capita income growth. The St. Louis MSA will grow 7% in population and 37% in per capita income

during the same period of time. However, the resultant per capita income level will be 5% higher than the national average, (14). St. Louis City ranks 15th in county areas in the nation for the number of manufacturing establishments (965). These establishments employ 106,596 persons. There are a total of 1499 manufacturing plants in the MSA which ship over \$20.8 billion worth of goods, ranking 13th in the nation, (15).

Median household income after taxes for the MSA in 1985 was \$26,667; with growth in all counties except those in Illinois, based on Sales & Marketing Management Data. In the East-West Gateway included counties, the median income after taxes was: (1) Madison - \$22,186; (2) Monroe - \$23,720 and (3) St. Louis - \$21,561. Even with that said, the St. Louis MSA ranked 11th in the U.S. with total suburban income after taxes exceeding \$23 billion, (16). It is interesting to note that of the 10 suburban areas exceeding St. Louis in income after taxes, 8 have multiple commercial airport complexes serving the area.

The reasons for the lower incomes in the Illinois counties are varied, but basically track to the farm orientation of the labor market. Based on State of Illinois statistics, 47% of the civilian labor force in the Illinois part of the MSA (5 counties) are employed in agriculture activity. Unemployment figures for the Illinois 5 county area of Clinton, Jersey, Madison, Monroe and St. Clair show an available labor pool of approximately 25,000

persons which could be applied to new industries, with some training, (17).

As pointed out in a recent U.S. Chamber of Commerce study, (18) the American economy has shifted from farm to factory to service jobs. From 1970 to 1982, manufacturing employment had declined by 2.3% while total national employment had grown by 21 million people (26.5%). Despite the statistics, manufacturing still offers advantages to economic growth of a community. The Chamber has concluded that counties that experienced significant growth in manufacturing jobs were more prosperous, with greater increases in the number of businesses, retail sales and population than counties without manufacturing growth. They go on further to say that 100 new manufacturing jobs mean the following to a community in net changes:

aggregate personal income	\$1,948,353
new retail establishments	7
non-manufacturing jobs	64
population increase	202
family units	102
school enrollment	61
retail sales	\$1,477,453

The 64 new non-manufacturing jobs would be distributed as:

wholesale/retail	
entertainment and recreation	+45
transportation	+7
finance, insurance, real estate	+3
business repairs and services	+3

construction +3

public administration +3

The retail sales of \$1,477,453 would be distributed as:

Durable Goods

building materials	\$ 73,893
automobile dealers	245,257
furniture & home equipment	66,485
other	<u>60,556</u>
	\$ 446,191

Non-durable Goods

food stores	\$ 339,814
general merchandise	180,249
eating and drinking places	138,881
gasoline stations	152,178
apparel and accessories	70,918
drug and proprietary stores	50,233
liquor stores	26,594
other	<u>72,395</u>
	\$1,031,262

Even though manufacturing has a positive impact on a community, there are only one in five jobs which are in manufacturing. If in fact, a community has the incentives for attracting manufacturing, they can also draw other businesses. These incentives include, but are not limited to favorable:

- State and local fiscal policies
- State regulated employment costs
- Labor costs
- Availability/productivity of labor forces
- Other
 - .. energy costs
 - .. environmental control
 - .. markets
 - .. transportation

The addition to the air facility at Scott AFB, will improve the regions ability to attract new industry to the region. The nature of the industry, whether service or manufacturing oriented, will determine the degree of positive economic impact on the local communities. There are few, if any business enterprises in the United States which are not transportation dependent, whether it be for access markets or for getting employees to work on time. The confluence of the road networks of I-255, I-55 and I-64; the railroad network and the location of Scott AFB (other things being equal) would assure maximization of the total transportation network potential, thereby being more attractive to potential businesses. Improved air service, in and of itself, will provide an attractive draw.

Airport employment will have an employment multiplier effect similar to that outlined above. The amount of that employment will depend largely upon the ability of the community to draw businesses who utilize air transportation services and the ability of the air facility to meet the demands for air services. To determine which comes first, is a debatable issue. Ideally, the growth of both the airport and the supporting industrial base will coincide. In addition, more than 500,000 residents of Madison, Monroe and St. Clair counties, (19) plus the 30,000 travelers from Scott AFB each year will provide a support base for limited passenger traffic, (20).

IPAC has developed a socio-economic model which will be able to provide broad indications of the socio-economic impact of the preferred site location. Built on mutually agreed multipliers, this model will allow various size and growth options to be examined in detail.

The positive socio-economic impact of development in Southwest Illinois will be solely dependent upon the desire of the local communities to support the development. Properly supported, the positive economic impacts are limited only by imagination and the ability to market the geographic location.

Social Impacts

The social impact on the local communities near Scott AFB by the addition of a runway and increased air traffic services will be minimized due to existence of a large 10,000 person employment base at Scott AFB and the existing military aircraft traffic. The existing infrastructure and activity have developed in stages over the years and have even had ebbs such as the initial move of the Communications Service Headquarters to Richards-Gebaur AFB near Kansas City. The reversal of that decision and the return of the Air Force Communications Command in the mid-seventies is an example of the elasticity of the communities' social structure to adapt without critical problems.

Flying activities have also changed over time with minimal impact. The return of the C-140 flight test aircraft, the T-39 training and administration support unit as well as the relocation of the Army Reserve helicopter unit are but a few examples.

Handled properly, with close coordination between the base and civilian communities, particularly an exchange of timely information, major changes can occur with minimal negative impact. It is however, imperative that the base and local communities work together in solving problems which do arise in the course of events. In reality, this type of cooperative effort has already been started by IDOT with its committee and public forum structure for oversight and information flow of the master plan activities.

The greatest social impact will occur with the on-base family population due to increased aircraft activity and the coincident noise levels. This is particularly true for the Wherry housing on the northeast side of the field. In the long term, as traffic levels increase, it may be advisable to move these nearly 1,000 families to a more suitable on-base location. Such action would actually improve the social quality of life for these on-base (Scott AFB) families for several reasons. The northeast Wherry housing has recently been upgraded with soundproofing and other amenities. It was however, for many years listed as substandard housing for which occupants were not required to pay full housing allowance. Standard housing eligibility requirements were also

waived.

In addition, this housing area has many drawbacks in that it is isolated from the majority of the quality of life base activities such as shopping centers, hospital, clubs and even the youth center. In addition, except for a few persons who work in adjacent areas, some form of vehicular transportation is required for residents to reach their places of work. The location of the Wherry housing presents security problems because an additional access gate must be monitored. It also frequently causes aircraft safety problems by pedestrian encroachment on the active runway by those who do not wish to walk a longer perimeter route.

With regular airline service to Scott AFB, the social advantages of easy access to the national airport system for base and local community residents will be a definite positive factor, as will the resultant economic growth.

The social impact foreseen for increased aircraft activity at Scott AFB will depend to some degree upon the level of activity, the schedule of activity, and the rate of growth of the activity. More importantly, however, will be the acceptance by the people in the surrounding community of the project. Unfortunately, individual perceptions of what is acceptable and positive varies in location and space. Even the profession of the individual citizen enters into the equation. For example, a commercial real

estate developer will view an airport expansion in a much different light than a farmer who may lose 80 acres of rich land which has been in the family for a century.

These issues and differences can be dealt with by solid planning and open exchanges of information. A recognition by the community of the need for progress in the form of development of air transportation can have a positive influence in minimizing social complaints. The Scott AFB development must be placed in perspective relative to the community values.

There is no doubt that the implementation of a coordinated noise abatement program will be required to assure minimal social impact from activity noise. This could include noise barriers and or construction materials for homes located in the higher Ldn noise level areas. These areas will be clearly defined in the master plan, as alternative runway configurations are studied. Noise is also discussed further in other sections of this report.

Many of the social impacts on the local communities will be gradual and long term. For example, the interstate system which has been in existence a long time is now allowing areas such as O'Fallon, Belleville, Fairview Heights and Caseyville to become attractive alternatives for bedroom communities for St. Louis employees. The shift has been gradual and part of the normal community development. The impact of the increased airport

activity should follow the same relative growth pattern. Normal, considered community planning and development should minimize any negative social factors which develop over time.

FOOTNOTES

- (1) Department of Transportation, State of Illinois, Feasibility Study for Joint Military-Civilian Use of Scott Air Force Base, April 1986, Section 7.
- (2) Department of Transportation, State of Illinois, Feasibility Study for Joint Military-Civilian Use of Scott Air Force Base, April 1986, Section 5.
- (3) Department of Transportation, State of Illinois, Feasibility Study for Joint Military-Civilian Use of Scott Air Force Base, April 1986, Section 6.
- (4) Op. cit., page 9-18 ff.
- (5) All reports provided by Julia Hertenstein (Cultural Resources Assistant) of the Illinois Historic Preservation Agency - Division of Preservation Services.
- (6) Interim Report on the Inventory of Historic Landmarks in St. Clair County, prepared by the Illinois Historic Landmarks Survey - Illinois Department of Conservation, January 1975.
- (7) Interim Report on the Inventory of Architecture Before WW II in Belleville and East St. Louis in St. Clair County, prepared by the Illinois Historic Structures Survey - Illinois Department of Conservation, October 1974.
- (8) Interim Report on the Inventory of Historic Structures in St. Clair County (except Belleville and East St. Louis), prepared by the Illinois Historic Structures Survey - Illinois Department of Conservation, October 1972.
- (9) Feasibility Study, Op. cit.
- (10) Dr. John Walthall, Chief Archaeologist - Illinois Department of Transportation, Bureau of Location and Environment.
- (11) Garbish, Edgar W., "Highways and Wetland Compensating Wetland Losses" FHWA-IP-86-22, Turner-Fairbank Highway Research Center, McLean, Virginia (1986).
- (12) Data for wetlands boundaries was obtained from National Wetland Inventory maps.
- (13) Data for floodplain boundaries was obtained from Federal Emergency Management Agency (FEMA) maps.

- (14) Derived from 1984 OBERS, BEA Regional Projections, Volume 2
U.S. Department of Commerce, Bureau of Economic Analysis
- (15) Sales and Marketing Management April 28, 1986
- (16) Ibid.
- (17) Economic Information and Analysis Division Program and
Planning Bureau Illinois Department of Employment Security
Employment and Unemployment Summary 1986
- (18) What 100 New Jobs Mean to a Community. U.S. Chamber of
Commerce
- (19) Population Estimates, East-West Gateway Coordinating Council
- (20) Survey of Scheduled Airline Ticket Office, Scott AFB, Il.

3.2 Construction of a New Airport

3.2.1 Institutional Issues

Brief Statement of History of Past Efforts

The construction of a new airport has been extensively studied in the past. However, the general approach was to build a new airport which would replace, rather than supplement, Lambert-St. Louis International Airport (Lambert-St. Louis).

This effort failed on institutional issues. Starting in 1969, 17 site alternatives were considered in two independent studies made by Horner and Shifrin, Inc., Consulting Engineers, St. Louis, Missouri, and by R. Dixon Speas, Aviation Consultants, Manhasset, New York. "The former study was undertaken for the City of St. Louis in 1969 and the latter for the State of Illinois in 1970. The Horner and Shifrin report evaluated twelve sites equally divided between Illinois and Missouri. It recommended that consideration be given to a new airport at a site north of Waterloo and southeast of Columbia, Illinois. Speas studied the 18 sites, including Scott Air Force Base (Scott AFB), shown on Exhibit 3.1-2. Twelve of these sites were rejected because of poor ratings in airspace compatibility, and one of the sites was consolidated with another site. Speas then made in-depth evaluations as possible alternatives of the remaining sites, two (A & B) in Missouri and three (C, D, and E) in Illinois", (1).

The Speas study eliminated site "A" due to poor ratings in airspace compatibility and passenger convenience. Similarly, Site "B" was eliminated because of poor ratings in development costs and noise impact. Of the three sites in Illinois, the Columbia-Waterloo site was preferred. The Speas study was followed by a Confirmatory Site Evaluation Study, which concentrated on the three sites. This study identified a slight change in the location of the Columbia-Waterloo site which would reduce construction costs and noise impacts, and confirmed that the Columbia-Waterloo location was preferred.

Subsequently, a third site selection study was performed for the state of Missouri by the Northrup Airport Development Corporation (NADC). This report, issued in August 1971, evaluated 11 alternative sites, 10 in Missouri, and the Columbia/Waterloo site in Illinois. NADC narrowed this field down to three contenders, Smartt and Dardenne in Missouri, and Columbia-Waterloo. "NADC found that Columbia-Waterloo appeared to have the lowest adverse environmental impact, whereas St. Charles - Smartt would cost less to develop and Dardenne would have less ground access costs", (2).

Speas rejected Scott AFB (Site 2 on Exhibit 2.2-1) because of "its location relative to existing urban development and because the Air Force had no plans to deactivate the military installation", (3). "... the Air Force informed the authority

that use of the base as a commercial regional air carrier should not be given further consideration. Even assuming that the Scott AFB site was available for use, expansion of the base to accommodate the recommended airport layout plan would require the acquisition of thousands of additional acres of land...", (4).

Site comparisons must necessarily be made on the basis of some conceptual airport layout plan. The NADC concept visualized approximately 5000 acres for airport development and 7000 acres for noise buffer zones. (The noise buffer zones contained all areas with noise 40 NEF or greater. 40 NEF is approximately equivalent to 75 Ldn. It is important to remember that at the time these studies were done the commercial air carrier fleet was considerably noisier than it is today, or will be in the future.) The Speas layout required about 10,500 acres for airport development, and 7,850 acres for noise buffer zones. (The Speas noise criteria was 115 CNL, again roughly equivalent to 75 Ldn.)

The NADC layout envisioned two independent runways separated by 7,000 feet, and two dependent runways 1,500 feet from the independent runways. The ultimate Speas layout had four parallel independent runways, and two parallel secondary runways.

A Draft Environmental Impact Statement was submitted to the FAA in January 1972, and an FAA prepared addendum was dated January, 1975.

Under a contract with the U.S. Department of Transportation, Peat, Marwick, Mitchell & Co. performed a further study, completed in November, 1975. The study was limited to a comparison of Lambert-St. Louis and Columbia-Waterloo. Further, as stated in the report, (5) "Much of the controversy regarding how commercial air service should be provided in the St. Louis region has revolved around the question of whether or not a new air carrier airport should be built".

"This study takes a slightly different analytical view of the problem of when, rather than whether, the new airport should be built. The view stems from the expectation that, in future years, air travel to and from St. Louis will continue to grow. At some time during this growth period, either Lambert-St. Louis will be incapable of handling the increased traffic, or environmental impacts will become unbearable, or both occur. At that point in time, unless appropriate (and successful) ameliorative actions are taken at Lambert-St. Louis, a new air carrier airport will be required."

The comparison of alternatives, then, was a comparison of alternative dates for transfer of air carrier activity from Lambert-St. Louis to Columbia-Waterloo. It was assumed that Lambert-St. Louis would continue in service as a major general aviation airport. Activities that would remain at Lambert-St. Louis "included Missouri Air National Guard operation, Ozark Air

Lines maintenance-related operations, McDonald-Douglas Corporation operations, and business jet operations related to the North American Rockwell International Maintenance Center, as well as a range of other types of general aviation operations", (6).

The alternative dates were 1985, 1990, 1995 and 2000. The alternatives were evaluated in terms of:

Airport Construction Costs

Airfield/aircraft operations cost

Airport access facilities construction costs

Airport access traveler costs

Noise impacts

Air pollution impacts

Natural environmental impacts

Community development and land use impacts

No recommendations or policy conclusion were to be made by the consultant.

The report summary states that, from a cost standpoint, the year 2000 alternative is the most attractive. Among the non-economic impacts, noise was judged to be the only significant difference. The noise impacts favored an early transfer.

The approval of the Final Environmental Impact Statement by the Administrator of the FAA on June 12, 1976, signified only that

the document fulfilled the requirements for acceptability for use by the Secretary in making his decision with regard to the dispositions of an application for Federal funds for the proposed new airport.

On September 1, 1976, Secretary Coleman issued his decision, (7) to approve the grant application, with a number of conditions designed to mitigate adverse economic or socioeconomic impacts associated with the ultimate transfer of air carrier operations from Lambert-St. Louis. In his decision paper, he stated "Now that I have approved conditionally the SMAAA application, it is my deep hope that the responsible leaders of the region will set aside their past differences and take steps to insure a regional approach to provide for the future aviation needs of the St. Louis area."

The institutional issues which were at the root of the "past differences" were not, however, put to rest. Four and a half months later a new administration was inaugurated, and, on March 30, 1977, the new Secretary, Secretary Adams, reversed the decision of the Secretary Coleman.

In his decision paper, (8) Secretary Adams stated: "Without discounting the possibility that conditions at Lambert-St. Louis and at Columbia-Waterloo, Illinois may one day present a compelling case for site acquisition, I cannot find that present

circumstances dictate a need for immediate action in light of (a) the current adequacy of air service at Lambert-St. Louis; (b) the decision of the air carriers to extend their use and lease agreements through 1995 and the airlines view that Lambert-St. Louis will offer adequate air service during that period; (c) the relative stability of the rural character of the Columbia-Waterloo area and the ability of Illinois to preserve that character through local regulation; and (d) the fact that annoyance caused by aircraft noise does not presently outweigh the desire of most neighbors of Lambert-St. Louis to retain that facility as the major St. Louis air carrier airport."

The grant which had been issued was rescinded, and eventually the St. Louis Metropolitan Area Airport Authority disbanded. It is apparent that, in the final outcome, the institutional issues outweighed other considerations.

3.2.2 Technical Issues

Airspace/Obstructions

The FAA conducted an aeronautical study of a new airport at Columbia-Waterloo. The study did not identify any en route, arrival, departure, or transitional problem that cannot be resolved procedurally, (9). No Part 77 obstructions were identified.

Airport Development Requirements

The rectangular 3,900 acre area shown in Exhibit 3.2-1 (inside the 1976 Columbia-Waterloo Airport site delineation) is the recommended layout for the typical air carrier size airport facility described in Section 2.1.3. This airport would supplement Lambert-St. Louis with two runways, 12,000 feet and 10,000 feet long. There should be no major physical problems in locating an airport of this size in the Columbia-Waterloo region.

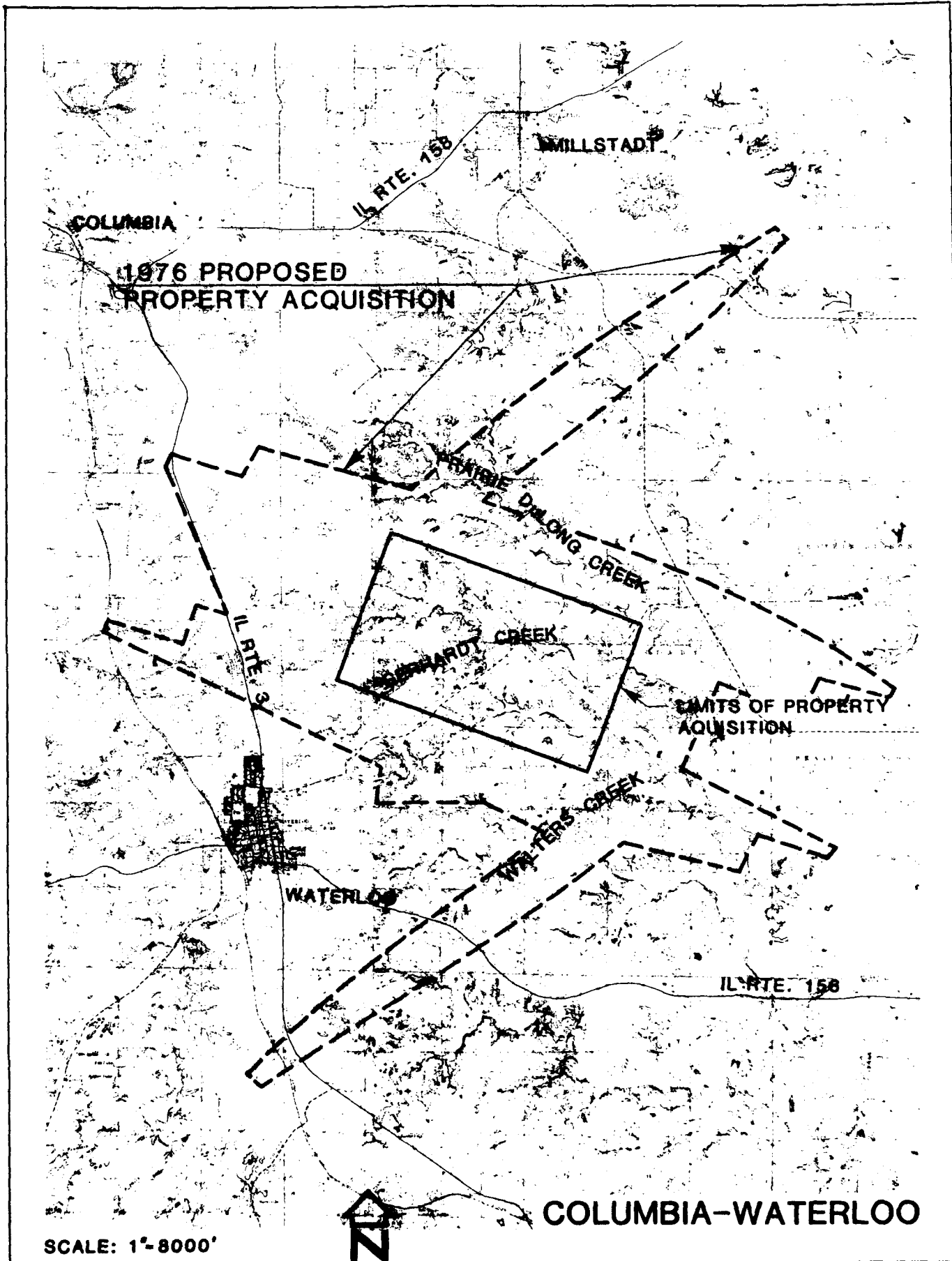
Capacity

A completely new airport would supply ample capacity to the system. No existing airports, general aviation or otherwise, would be affected. If two runways were eventually built, they could be built with sufficient separation to provide simultaneous independent operations, adding hourly IFR capacity in the order of 100 operations per hour.

3.2.3 Economic Issues

Cost of Construction

A cost comparison analysis of development items at the Columbia-Waterloo (New Airport) site as depicted in Table 3.2-1 with those estimated for the Scott AFB site appears to yield similar results. However, due to the relatively remote location of the proposed Columbia-Waterloo site with respect to major



COMPARATIVE COST SUMMARY USING SCOTT AIR FORCE BASE
AS A BASE OF REFERENCE

DEVELOPMENT ITEM	SCOTT AIR FORCE BASE	COLUMBIA- WATERLOO	ST. LOUIS REGIONAL	ST. LOUIS DOWNTOWN-PARKS	HIGHLAND- WINET	SHAFFER- METRO EAST
1. LAND ACQUISITIONS	\$ 4M	\$	H	H	S	S
2. SITEWORK	\$24M	\$	L	L	S	S
3. WETLAND MITIGATION	\$21M	\$	L	L	L	L
4. PAVEMENTS	\$69M	\$	S	S	S	S
5. STRUCTURES	\$68M	\$	S	S	S	S
6. LIGHTING & NAVAIDS	\$10M	\$	S	S	S	S
7. ACCESS	\$ 6M	\$	H	H	S	S
8. MISCELLANEOUS	\$15M	H	S	S	H	H
9. TOTAL	\$217M	\$	S	H	S	S

* Based on Feasibility Study for Joint Military-Civilian Use of Scott Air Force Base, April 1986.

S - Same Approximate Cost L - Lower Approximate Cost H - Higher Approximate Cost

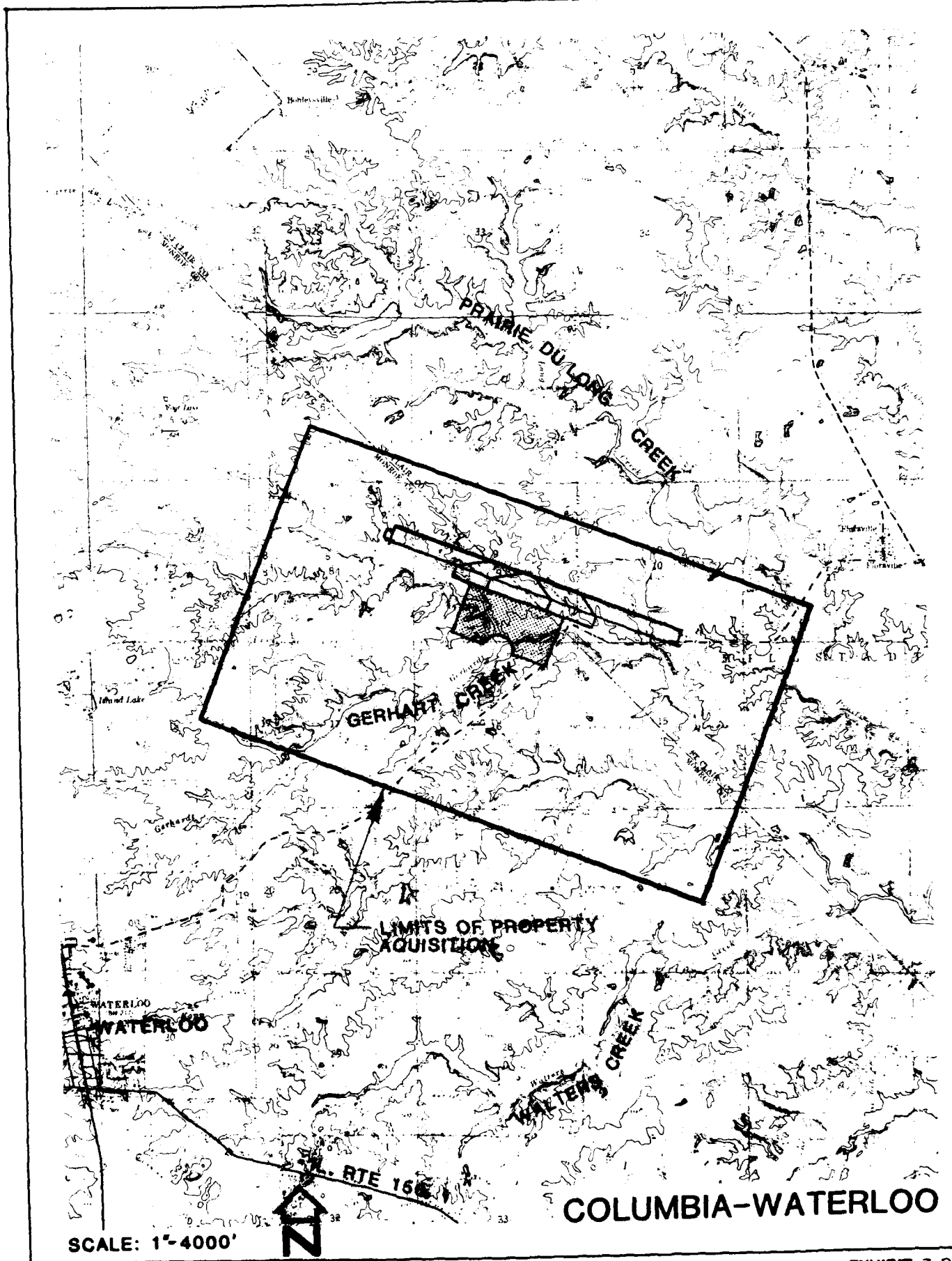
utility access, it is expected that miscellaneous items such as utility access and installation will be significantly higher when compared to the Scott AFB site. The primary reason for this is that sewer, water, electricity and waste-water treatment may be available on the base. This cost when compared with the overall cost of the project is minor which accounts for the total costs for Columbia-Waterloo being approximately the same as at Scott AFB. Due to the rural setting of this site, land acquisition costs while being approximately twice as costly as at Scott AFB, are not significantly greater as compared with the land acquisition costs at St. Louis Downtown-Parks Airport and St. Louis Regional Airport where urban land acquisition costs are substantially greater at either Scott AFB or Columbia-Waterloo.

The costs for the first phase of construction at Columbia-Waterloo will be significantly higher than at Scott AFB due to the total lack of existing airside and utility infrastructure at the new airport site as compared with Scott AFB.

3.2.4 Environmental Issues

Land Acquisition

The acreage layout for a revised Columbia-Waterloo Airport for this particular analysis is 3,900 acres as shown in Exhibit 3.2-2.



General land features have been identified within this shape in St. Clair and Monroe Counties. They include approximately 450 acres of floodplains; and approximately 3,450 acres of farmland. Portions of several creeks cross the site, most notably Kopp, Walters and Prairie du Long Creeks. Approximately 89 total dwelling units appear within the proposed site area.

Noise

The area between the 75 Ldn contours and the 65 Ldn contours calculated for the civil runway at Scott AFB in 2005, (10) is about one-sixth of the area between similar contours for the major development at Columbia-Waterloo, (11). On this basis, it is estimated that the number of people living within the 65 Ldn, outside the 75 Ldn contour is about 360. (These estimates in the Columbia-Waterloo study are based on 1970 populations.)

Compatible Land Use

Land use in the neighborhood of the Columbia-Waterloo site is almost entirely agricultural, a use which is compatible with aviation activity.

Historical and Archeological Locations

At the time that serious consideration was being given to a new airport at Columbia-Waterloo, only one archeological site was identified within the 18,500 acres of the proposed airport

boundary, (12). It appears unlikely that an airport containing only 3900 acres would impact any identified archeological location.

No historic locations were identified within the original site.

Section 4(f) Lands

Within the original site, there were no parks or recreation areas in existence, although a low-probability potential future site in connection with a possible reservoir was identified, (13).

Endangered Species

No rare and endangered species were identified on the site, (14). The site is within the distribution range of the Indiana Bat (Myotis sodalis), a State and Federally listed endangered species. No Indiana Bats are known to reside in the Columbia-Waterloo site.

Biotic Communities

Flora and fauna are common animals, insects, birds, tree shrubs and flowers. Most of the area has been cultivated. There is no unique wildlife habitat.

Farmlands (See Exhibit 3.2-2a)

Approximately 2300 acres of productive farmland would eventually be taken out of service. Any areas of prime and unique farmland within the site have not been identified.

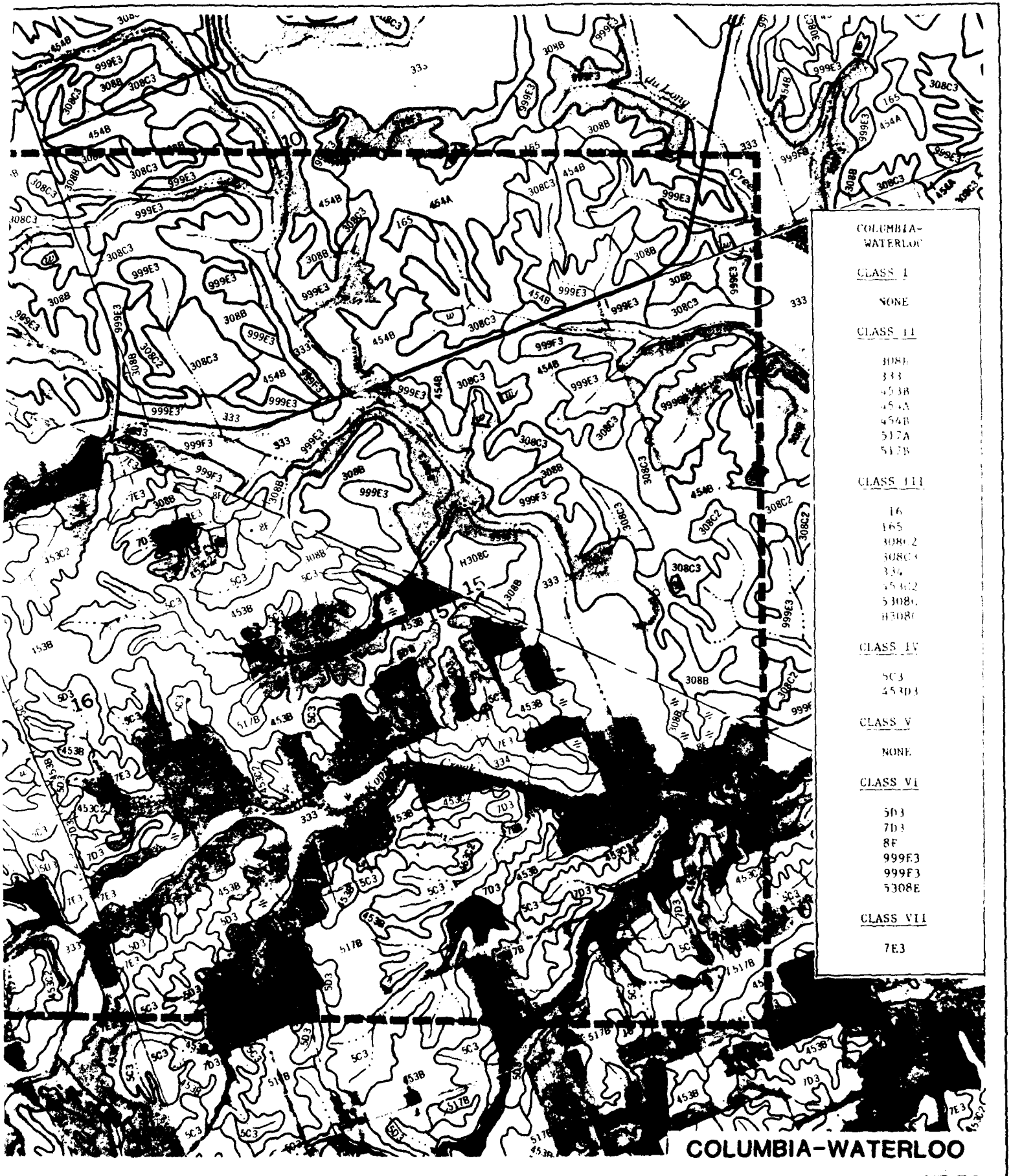
Wetlands (See Exhibit 3.2-3)

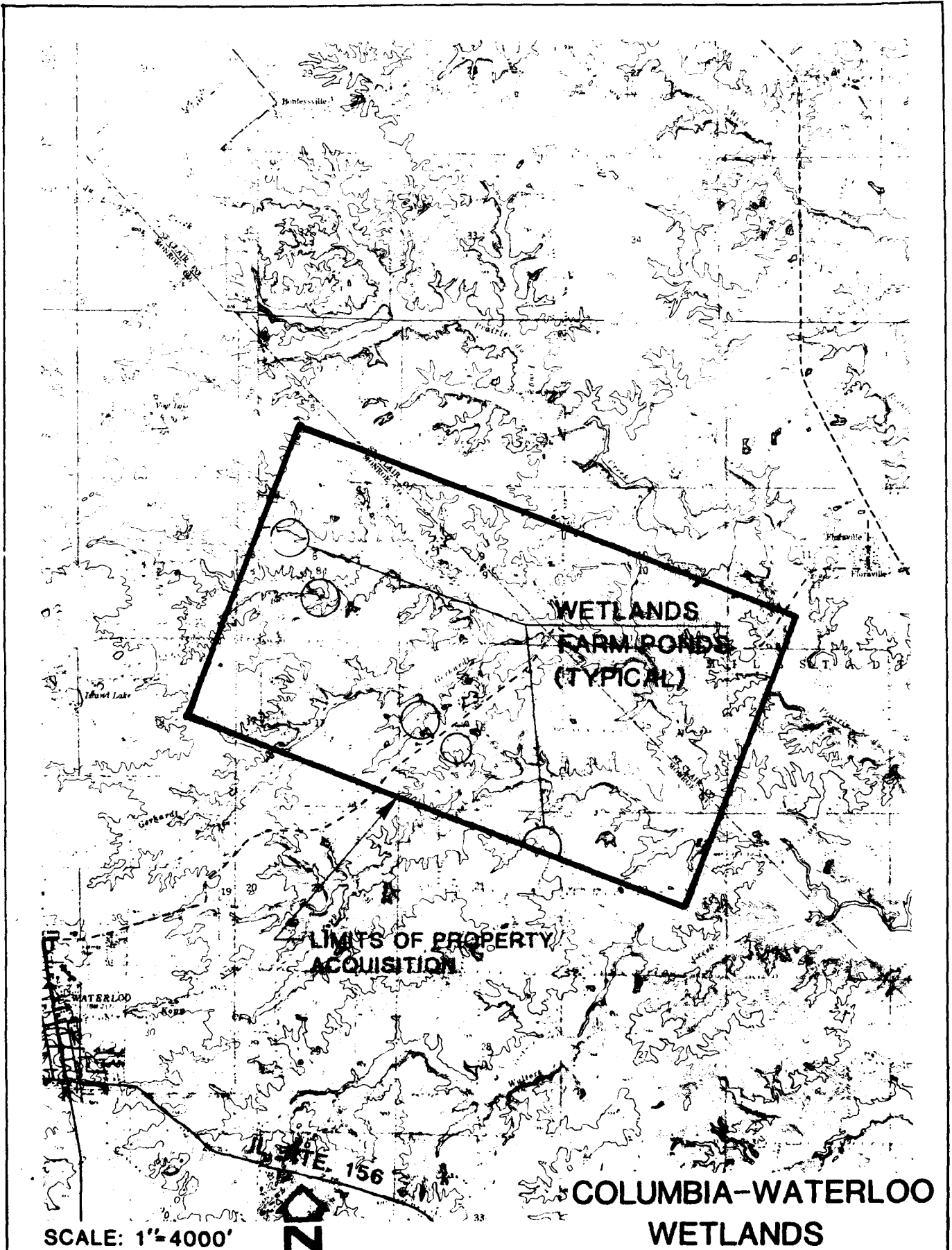
National Wetlands Inventory maps of this area are not yet available. However, site investigations and discussions with officials from the U.S. Fish and Wildlife Service and the Illinois Department of Conservation indicate the presence of wetlands. Portions of Gerhardt, Kopp and Prairie Du Long Creeks and other isolated locations are anticipated to be included in the National Wetlands Inventory. It is estimated those areas identified as wetlands could comprise a significant portion of the proposed development site.

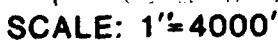
Floodplains (See Exhibit 3.2-4)

Floodplains were not specifically identified on the original site. There are several creeks with low minimum flows, (15). However, FEMA mapping of the area indicates that a significant area of floodplains could be affected (shown shaded on Exhibit 3.2-4). It is possible that, in a final layout, both runways would traverse floodplain areas. Additional study of these consequences will be required if this alternative is pursued.









Access (See Exhibits 2.2-1 & 3.2-2)

Illinois Route 3 passes by the Columbia-Waterloo site, about eight miles from Columbia. Columbia is reached by Interstate 255 from the North, and Interstate 270 from Missouri.

Social and Socioeconomic Impacts

The area is basically rural in character. The location of a new airport would accelerate industrial and residential growth in the area. As traffic grows, the need for ground services will expand, leading to car rental facilities, overnight lodging, restaurants, etc. Undoubtedly, there will be people desirous of maintaining the current rural atmosphere who will react adversely to these changes. However, the changes will occur gradually over time. Because of the proximity to a major metropolitan area, such changes will probably occur eventually in any case. The addition of an airport will affect the timing, and, to some extent, the character of the changes.

As previously mentioned, there will be a loss of farm land. There will also be an increase in employment opportunities. By the year 2005, this would result in the creation of 5000 to 6000 jobs.

FOOTNOTES

- (1) U.S. Department of Transportation, Federal Aviation Administration, NEW AIRPORT FOR ST. LOUIS METROPOLITAN AREA, Final Environmental Impact Statement, (FEIS) September 1976, page 4-2
- (2) Op. cit., page 4-6.
- (3) Op. cit., page 4-6
- (4) Op. cit., page 4-6
- (5) Peat, Marwick, Mitchell & Co. Summary Report of the St. Louis Airport Investigation - Phase II, November, 1975, page 4
- (6) Op. cit., page 5
- (7) Department of Transportation, Secretary's Decision on a Grant Request from the St. Louis Metropolitan Area Airport Authority, September 1, 1976
- (8) Decision of Brock Adams, Secretary of Transportation on Federal Funding of Land Acquisition for a New Airport to Serve the St. Louis Region, March 30, 1977
- (9) FEIS, Op. cit., page 1-17
- (10) Department of Transportation, State of Illinois, Feasibility Study for Joint Military-Civilian Use of Scott Air Force Base, April, 1986
- (11) FEIS Op. cit., page 2-37
- (12) FEIS Op. cit., page 2-106, 107
- (13) FEIS, Op. cit., page 2-103
- (14) FEIS, Op. cit., page 2-99
- (15) FEIS, Op. cit., page 1-29

3.3 St. Louis Regional Airport

3.3.1 Institutional Issues

As a publicly owned airport, expansion to accommodate commercial air traffic is a decision of the sponsor.

3.3.2 Technical Issues

Airspace/Obstructions

St. Louis Regional is located approximately 17 nautical miles from Lambert-St. Louis International Airport, and is about 60 degrees offset to the northeast from the extended centerlines of the Primary Runways 30R-30L at Lambert-St. Louis. The TCA (see Exhibit 3.1) associated with Lambert-St. Louis passes over top of St. Louis Regional at an elevation of 4500 feet above mean sea level (MSL).

St. Louis Regional currently has a precision ILS approach to Runway 29 for use under IFR conditions which favor an approach in that direction. St. Louis Regional also has several nonprecision approaches, approaches that provide electronic horizontal guidance, but not vertical guidance, for instrument approaches under conditions favoring the use of Runways 11, 17 and 29.

All of the instrument approaches available at St. Louis Regional have operating altitudes that are well below the TCA.

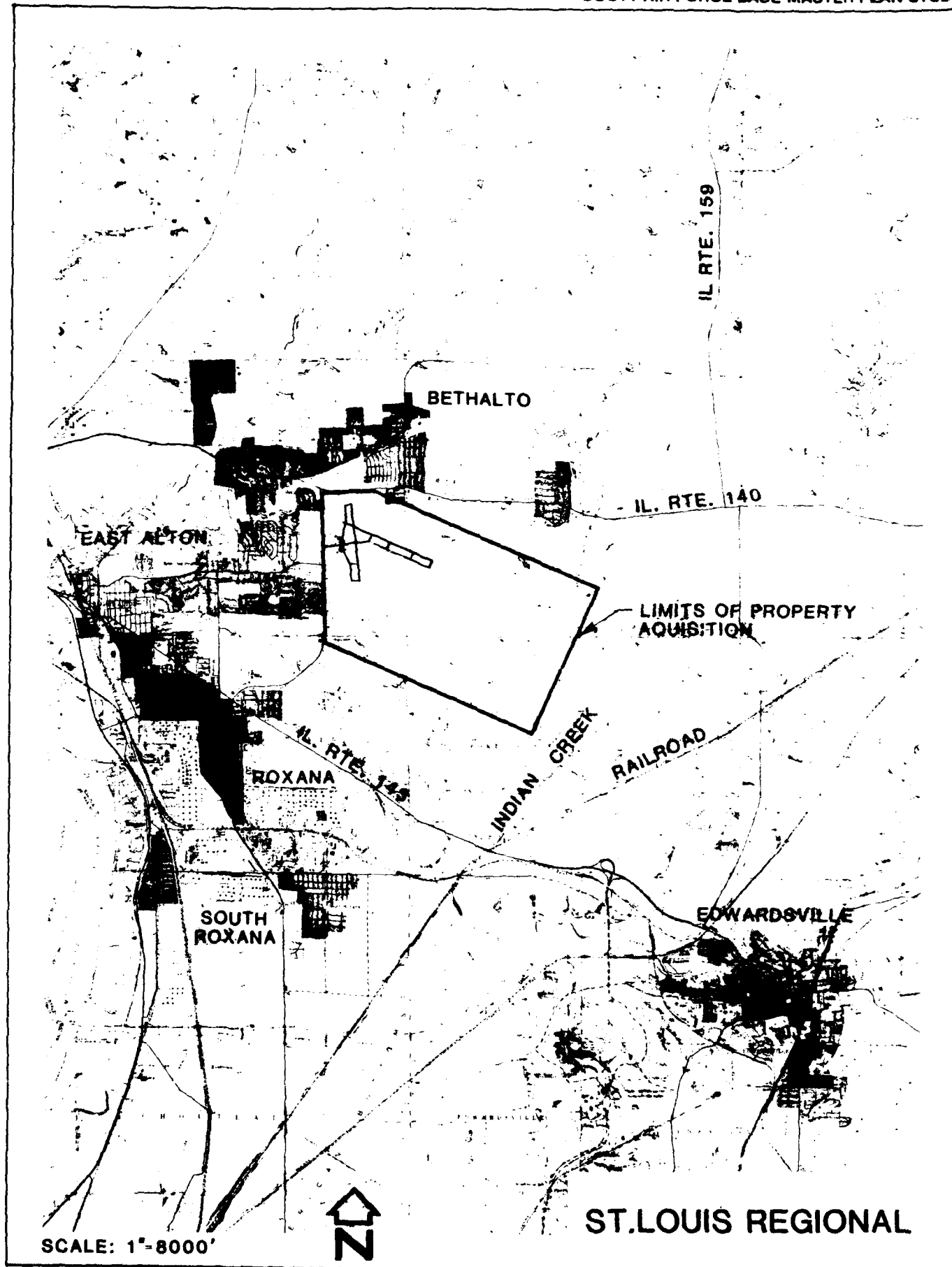
Initial approach altitudes are no higher than 2,100 feet MSL in the vicinity of the airport. Therefore, no airspace conflicts are anticipated for this site.

There are no known obstructions that violate the FAA Part 77 Imaginary Surfaces as specified in Table 2-1.

Airport Development Requirements

The typical airport development requirements described in Section 2.1.3 of this report are capable of being accommodated as depicted in Exhibit 3.3-1. The development of St. Louis Regional into an air carrier facility benefits from the potential use of an existing airside pavement system although it would have to be expanded and strengthened to accommodate the air carrier/air cargo aircraft.

The existing primary runway (Runway 11-29) is currently 6,500 feet in length by 100 feet in width. To expand the runway to accommodate air carrier aircraft would require lengthening the runway by 3,500 feet, widening the entire runway system to 150 feet and strengthening the existing runway to carry the loadings imposed by the air carrier/air cargo aircraft. In addition, the lengthening of the existing runway may require the filling-in of a significant portion of an existing tributary running parallel to the northern edge of the proposed airport boundary. This tributary flows directly into Indian Creek which passes through



the northeastern edge of the site. It is likely that there are numerous wetlands located along this tributary and Indian Creek.

The alternative to extending the existing runway is to construct the new primary air carrier runway on the south side of, and parallel to, the existing primary runway. While this reduces the potential impact upon the wetlands, creek and tributary, it will result in the flight paths of arriving and departing aircraft passing over a greater number of urban dwellings, churches, and businesses. It will also probably require extensive grading of the Belk Park area located near the southwesternmost limits of the proposed property acquisition.

Development of the site would require the relocation of an existing pipeline that runs through the middle of the site.

The landside facilities are inadequate in that access to the site is limited to two-lane state roads with numerous at grade intersections. To properly access the site would require the phased construction of a limited access four lane roadway system that connects directly into the interstate system located well to the east and south.

Capacity

Development of air carrier capacity at St. Louis Regional would be at the expense of general aviation capacity. The airport now operates as a reliever to Lambert-St. Louis, and this role would be impaired.

3.3.3 Economic Issues

Cost of Construction (See Table 3.3-1)

Development item costs at St. Louis Regional vary significantly from those estimated for Scott Air Force Base (Scott AFB) in four areas. These include land acquisition, sitework, wetland mitigation, and access.

St. Louis Regional is located on the outskirts of the City of Alton and the Village of Bethalto. Because of the orientation of the site, the proximity of the airport with respect to neighboring communities, and the increased cost of the proposed land (2250 acres) with respect to Scott AFB (1500 acres), land acquisitions associated with the proposed St. Louis Regional site amounted to approximately eight times that estimated for Scott AFB. While sitework and wetland mitigation costs were estimated to be lower at St. Louis Regional because of the superior topographic features, access to the site is regarded as poor and in need of significant upgrading. IL Route 140 immediately north of the

COMPARATIVE COST SUMMARY USING SCOTT AIR FORCE BASE
AS A BASE OF REFERENCE

DEVELOPMENT ITEM	SCOTT AIR FORCE BASE	COLUMBIA- WATERLOO	ST. LOUIS REGIONAL	ST. LOUIS DOWNTOWN-PARKS	HIGHLAND- WINET	SHAFFER- METRO EAST
1. LAND ACQUISITIONS	\$ 4M	S	H	H	S	S
2. SITEWORK	\$24M	S	L	L	S	S
3. WETLAND MITIGATION	\$21M	S	L	L	L	L
4. PAVEMENTS	\$69M	S	S	S	S	S
5. STRUCTURES	\$68M	S	S	S	S	S
6. LIGHTING & NAVAIDS	\$10M	S	S	S	S	S
7. ACCESS	\$ 6M	S	H	H	S	S
8. MISCELLANEOUS	\$15M	H	S	S	H	H
9. TOTAL	\$217M	S	S	H	S	S

* Based on Feasibility Study for Joint Military-Civilian Use of Scott Air Force Base, April 1986.

S - Same Approximate Cost L - Lower Approximate Cost H - Higher Approximate Cost

site, and extending eastward approximately 12 miles to Interstate 55, would have to be expanded to four lanes to accommodate the forecasted demand and accessibility requirements. Taking these considerations into account with all other items being relatively equal, total development cost is expected to be approximately the same at at Scott AFB.

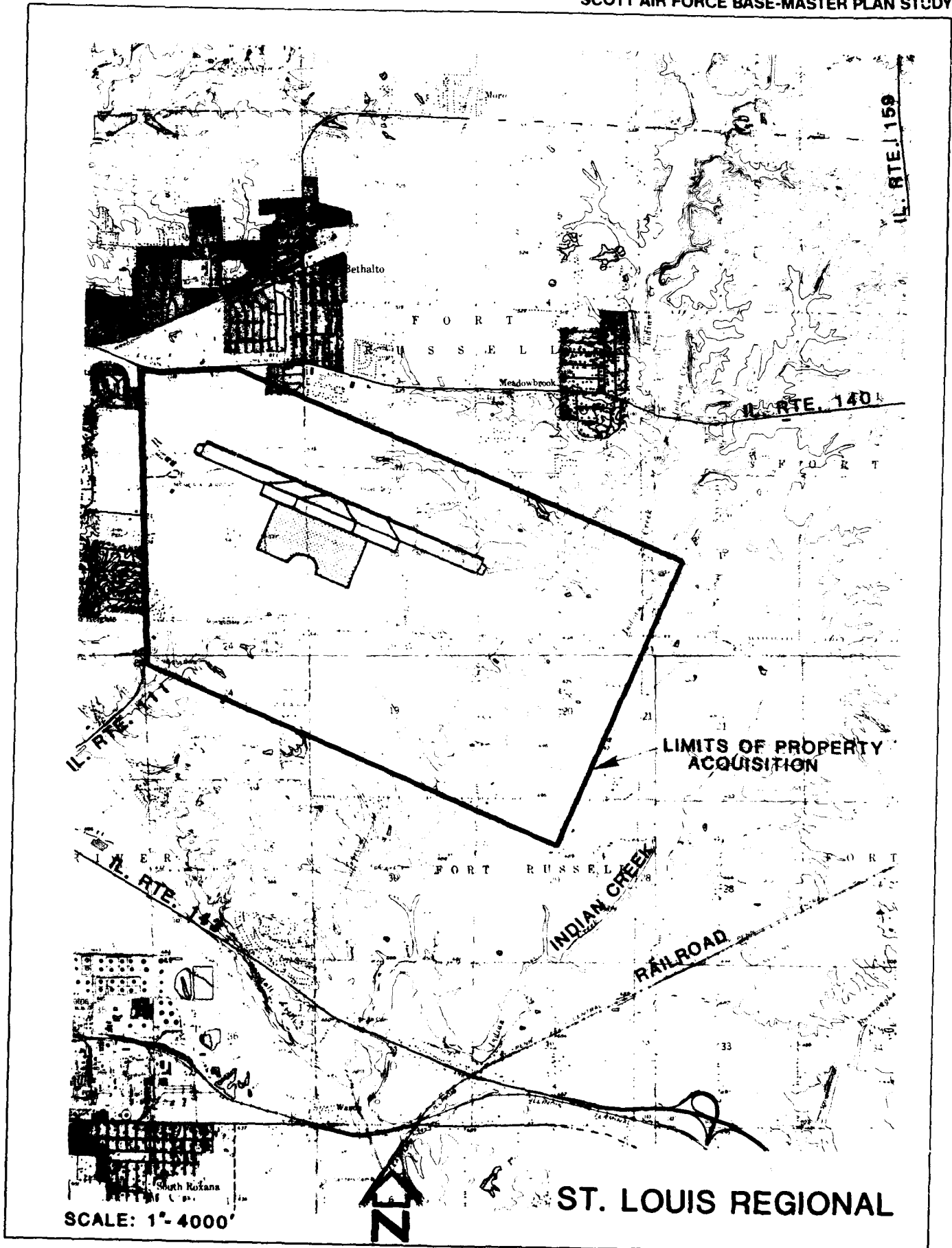
If existing Runway 11-29 at St. Louis Regional can be extended, strengthened and widened, the initial costs to accommodate air carrier/cargo operations would be less than at undeveloped sites such as Highland-Winet and Shafer-Metro East. Although the first phase costs at St. Louis Regional would probably be greater than at Scott AFB due to the somewhat superior existing infrastructure that may be available at Scott AFB versus St. Louis Regional.

3.3.4 Environmental Issues

Land Acquisition (See Exhibit 3.3-2)

The St. Louis Regional site is comprised of approximately 3,900 acres of land to serve the needs of the future airport. This acreage layout has taken the shape of a 17,000' x 10,000' rectangle with small adjustments on the northwest end to avoid established urban areas.

SCOTT AIR FORCE BASE-MASTER PLAN STUDY



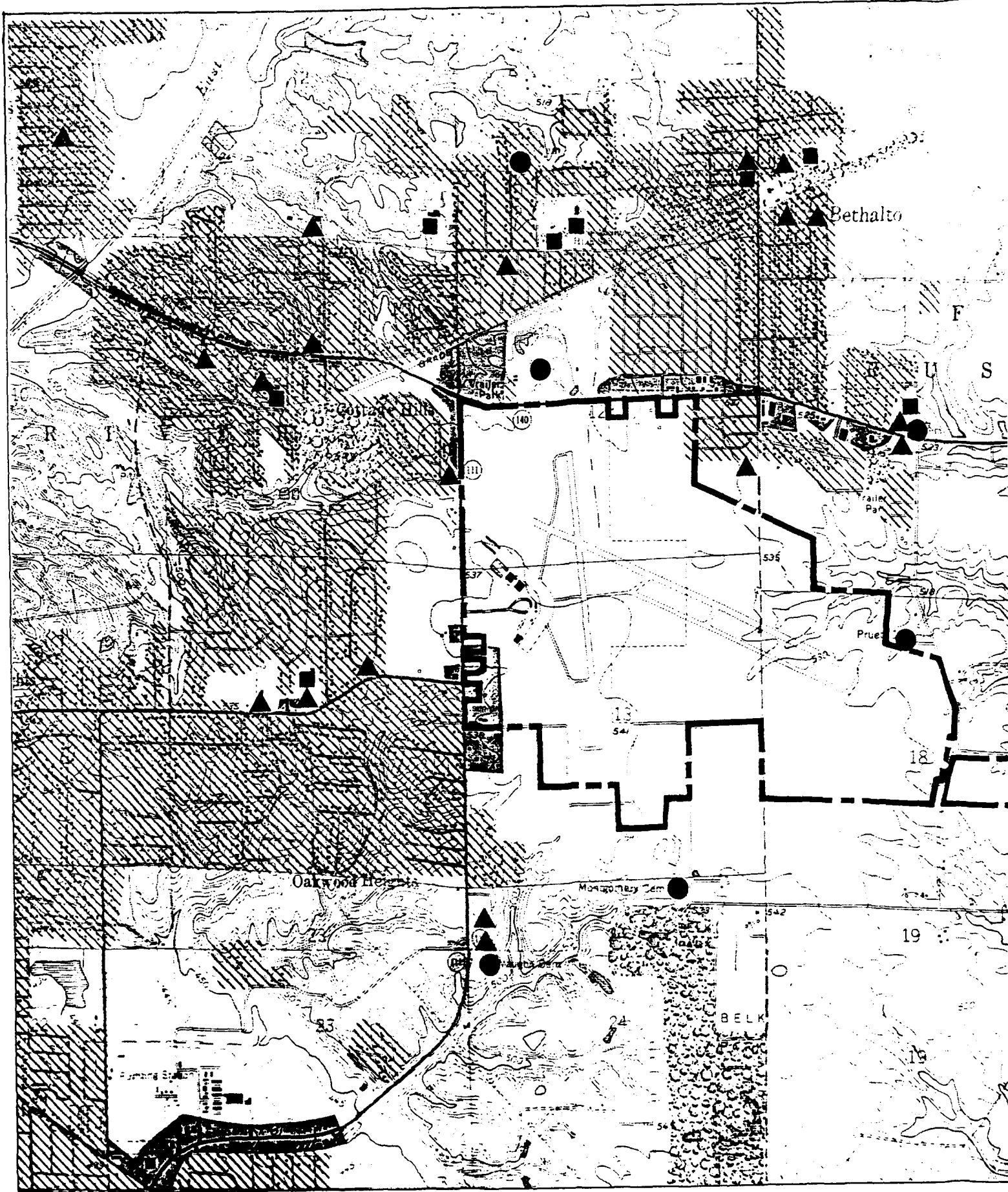
General land features within this area have been identified. They include approximately 1,790 acres of agricultural farmland, 1.6 acres of park and recreational area, 1,650 acres of airport property (1), approximately 300 acres of floodplains, an unquantified acreage of wetlands and scattered streams and woodlands within Madison County.

County roads stretch across the proposed airport site both north to south and east to west with a combined total distance of 8.6 miles of road within the proposed airport site boundaries.

While this airport is well located to serve existing activities, it would be less satisfactory than the other alternatives to serve as a commercial reliever airport, due to its location on the North edge of the seven county area. The ground transportation time to the airport for a large segment of the origin-destination traffic generators would not be appreciably different than the trip time to Lambert.

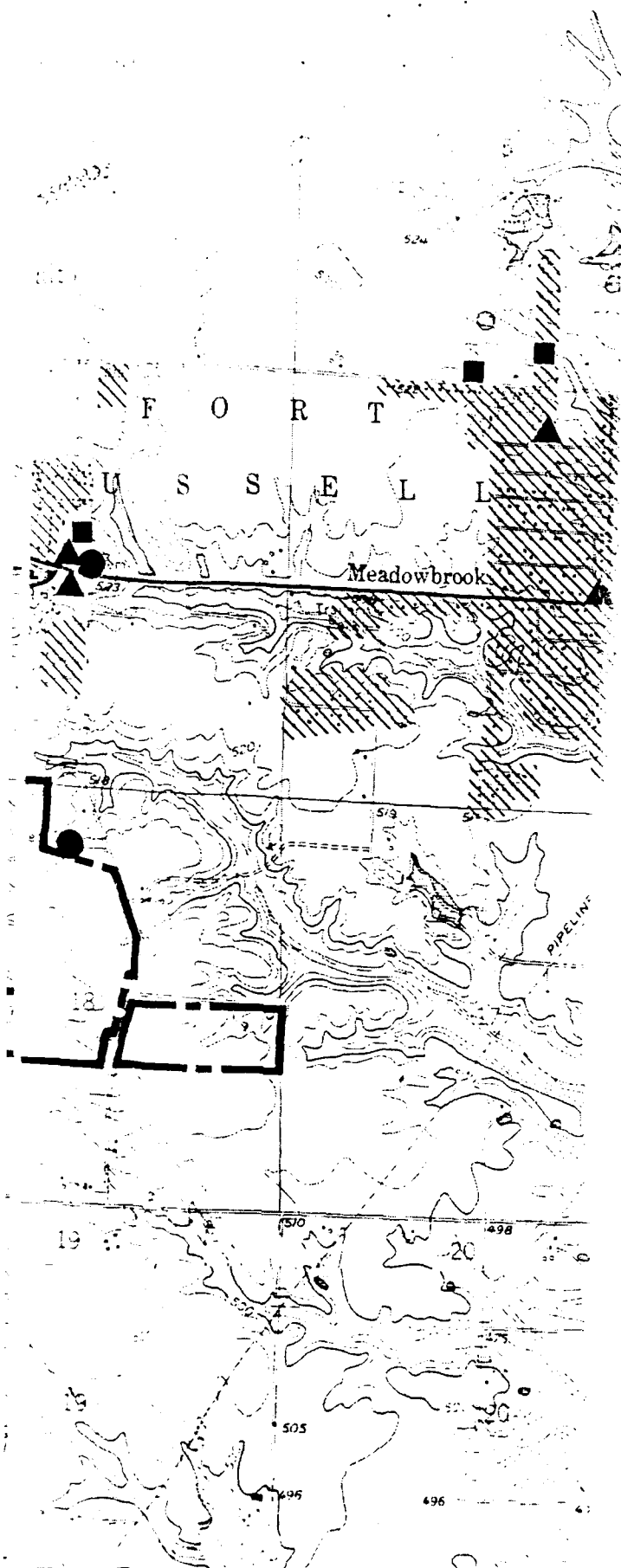
A single pipeline crosses the site in a north-northeast/south-southwest direction near the southeast end of the property.

Approximately 37 urban dwellings and 27 rural residential dwellings, three churches and three cemeteries appear in the proposed site area. (See Exhibits 3.3-2 and 3.3-3). Additional dwellings or structures may need to be acquired if they were found to be within a proposed 75 Ldn contour. This contour would be



St. Louis Regional Airport

FAR Part 150 Airport Noise Exposure Map Report

Land Use**Legend**

- Airport Property Line
- Residential
- Commercial
- Recreational
- Open/Agricultural
- ▲ Church
- School
- Cemetery



North



Scale in Feet

generated by a detailed noise study based upon forecasts and runway alignments undertaken only if this alternate is given further consideration.

Noise

The St. Louis Regional site is already highly developed, and operating at a scale which would indicate that it could be a prime candidate. The current principal runway is 6500 feet long. In anticipation of potential expansion, studies have been conducted on land use concerns. A mixed pattern of land use (residential, commercial, recreational, and open agricultural) is already established. Residential and commercial development has taken place along IL Routes 111 and 140, which border the site on the west and north, respectively. Residential properties consist of subdivisions, apartments and mobile home parks. Commercial properties are small scattered businesses along the highways. Major industrial land uses are generally outside the immediate geographic area of the airport. Recreational areas include parks, a golf course, play grounds and athletic fields. In the airport vicinity are twenty churches, eight schools and six cemeteries, as shown on Exhibit 3.3-3.

Studies of noise impacts from currently projected airport activities on non-compatible land use areas resulting from existing plans and projections indicate that conflicts are

inevitable. Some plans to abate the noise levels are already being considered as part of an approved FAA Part 150 airport noise compatibility program.

At operation levels which are anticipated post 2005, the 75 Ldn level would extend approximately 6500 feet northwest beyond the runway end. In the current runway position, this would put two churches and a school within the 75 Ldn contour, as well as numerous residences. Clearly, for the use contemplated, a new runway would be required, farther from the boundary of the site, so that the 75 Ldn contours would still leave many residences, at least four churches, and one school within the 65 Ldn contour.

Compatible Land Use

The St. Louis Regional site (see Exhibit 3.3-2) is already highly developed and operating at a scale which would make it a prime candidate for this project. Expansion has already been anticipated, and studies have been conducted on land utilization concerns. A mixed pattern of land use (residential, commercial, recreational, and open agricultural) has been established (see Exhibit 3.3-3).

Adjacent highways (IL Routes 111 and 140) represent compatible adjacent land use. Congestion would result, however, from an expansion of this site unless altered. Current plans to extend the interstate highway system (I-225) to serve this area

would make this site a viable option. There also appears to be considerable room for additional commercial development near the airport, along the highways.

Historical and Archeological Locations

The St. Louis Regional Area summarized below includes the cities and surrounding areas of Alton, Edwardsville and Bethalto. These areas have been inventoried for historic landmarks, architecture and structures which are or may be eligible for nomination to the National and State Registers of Historic Places, (2). The following information is an attempt to quantify the existence of structures of historic and or pre-historic significance in the general area of the five alternative airport sites. No determinations or opinions were rendered by the staff of the Illinois Historic Preservation Agency, pertaining to the eligibility of these sites for national or state registrations.

Historic Landmarks, (3)

- 33 Residences
- 3 Churches
- 10 Buildings
 - 1 Courthouse
 - 1 Library
 - 1 Cemetery
 - 1 Monument
 - 1 Prehistoric Indian Painting
- 51

Historic Architecture (Before WW II), (4)

79 Residences
7 Churches
12 Buildings
2 Schools
1 Coach House
1 Playhouse (Theater)
3 monuments
105

Historic Structures

None Listed

Total 156 Items

A Highway Corridor Study was performed for the extension of I-255 to serve the area of St. Louis Regional Airport and several small archaeological sites were found to exist in the area of the proposed airport expansion. No sites exist which would require preservation in place.

Department of Transportation Act, Section 4(f)

"Section 4(f) of the DOT Act provides that the Secretary shall not approve any program or project which requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance or land of an historic site of national, state or local significance as determined by the officials having jurisdiction thereof unless there is no feasible and prudent alternative to the use of such land and such program or project includes all possible planning to minimize harm resulting from the use", (5).

As stated above, "use" refers to the "fee simple taking, temporary or permanent easements, and constructive taking (e.g., isolating from surroundings)", (6).

It appears that the only publicly owned land required for use as defined above is Belk Park located south of St. Louis Regional Airport. Should the initial site evaluation warrant further investigation of the St. Louis Regional site, a detailed evaluation of the current park use and potential impact created by removing the park from service will be assessed with the results made available to the appropriate authority for review. Possible mitigation of the loss of park land could also be evaluated at that time.

Endangered Species

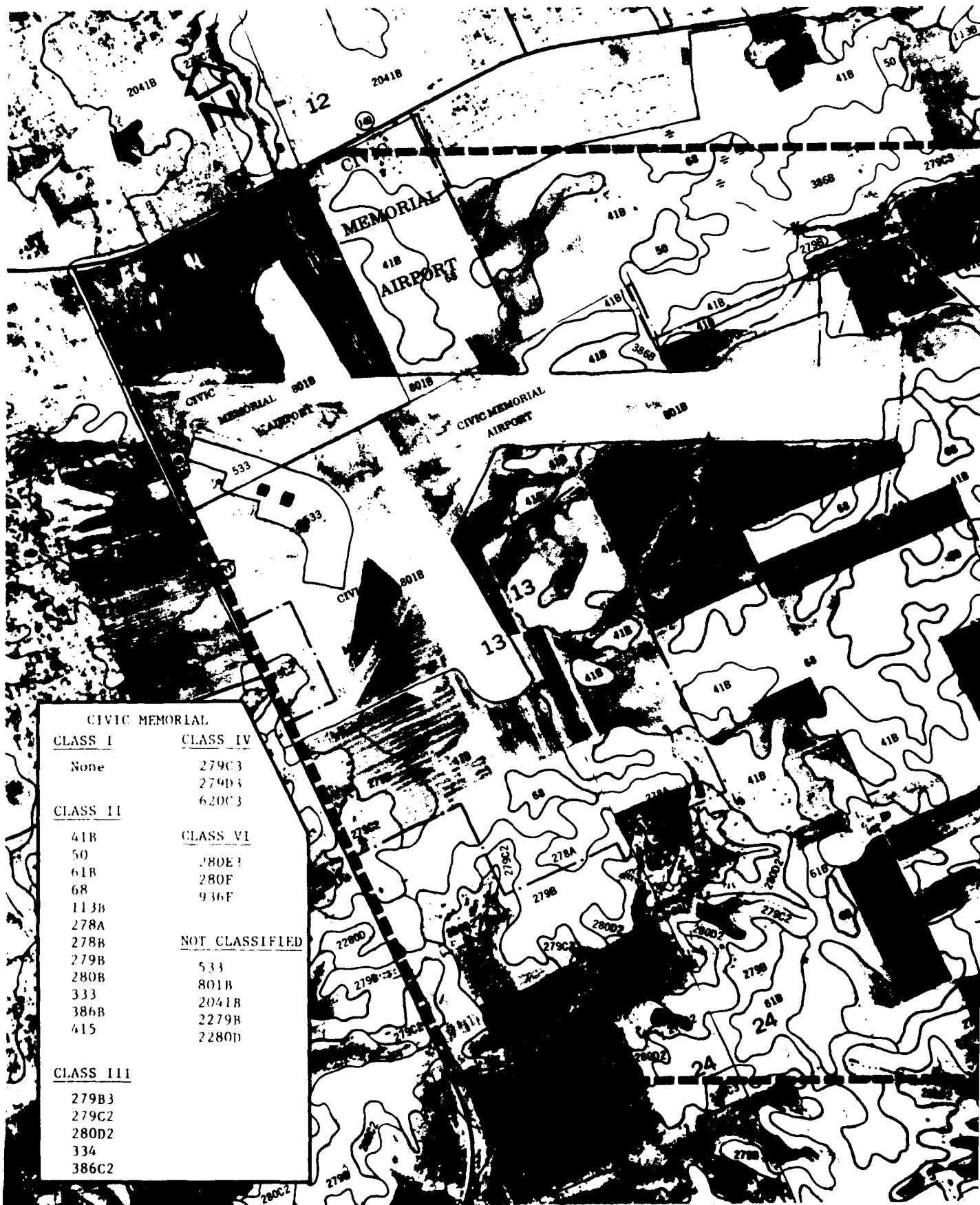
No undeveloped habitats which may be expected to support any of the county's known endangered plant or animal species were seen in the examination of the airport property and adjoining areas. No indirect interactions are known or postulated. The St. Louis Regional site is in the distribution range of the Indiana Bat (Myotis sodalis), a State and Federally listed endangered species. No Indiana bats are known to reside in the St. Louis Regional site.

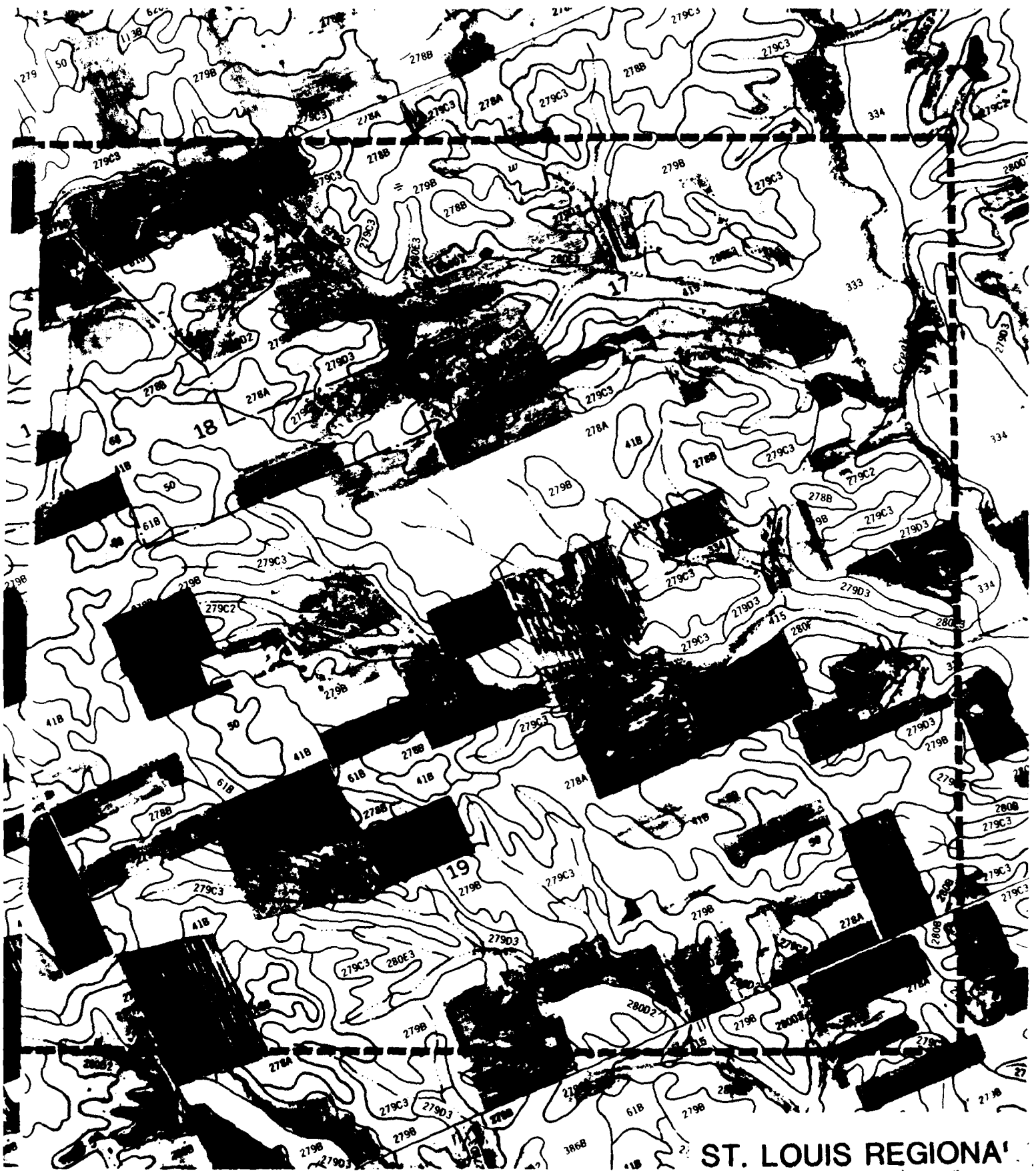
Biotic Communities

First-stage development (extension of the existing runway 11-29 to 8500 feet) is located entirely on filled and/or regraded soil which is maintained as rough sod and is currently part of the airport approach zone. Typical meadow species such as voles (Microtus spp.) and cottontail rabbits (Sylvilagus floridanus) may be expected to use these areas to some degree. Second-stage development (extension to 10,000 feet) or the addition of a parallel SE-NW runway will require relocation of a secondary road with associated fence rows and drainage ditches. The present strip provides about 1/4 mile of edge lands expected to be of average wildlife value. Extension of the existing runway will also require conversion of about 250 acres of clean tilled farm fields of below average wildlife value. Development of a parallel runway system would also include loss of several thousand additional feet of roadside and drainage ditch edge of average to slightly above average wildlife value.

Farmlands (See Exhibit 3.3-4)

Potential development at the St. Louis Regional Airport could generally involve primarily gentle sloping to steep, moderately well drained soils that have a moderately permeable subsoil; formed on uplands. Approximately 84% of the area necessary for development at this site is Class I, II or III lands.





ST. LOUIS REGIONAL

A detailed breakdown of the soil classes present at the potential St. Louis Regional Airport site is shown as following:

Class I - 0%

Class II - 80%

Class III - 4%

Class IV or below - 6%

Not classified - 10%

It appears that 90% of the land within the potential site area is suitable for cultivation from a soil classification standpoint having limitations that reduce the choice of plants, require moderate to very careful conservation practices, or both. As shown on the Floodplain Exhibit 3.3-6, approximately 300 acres on the east side of the proposed site, although classified as soil for cultivation, is subject to seasonal flooding of Indian Creek and its tributaries. The remaining 10% of the land or approximately 400 acres has not been included in the land capability class system because it is presently in use for aviation purposes at the St. Louis Regional Airport or is being used in urban land development.

Appendix E of this report further defines the eight soil classes and identifies those specific classes within Madison County.

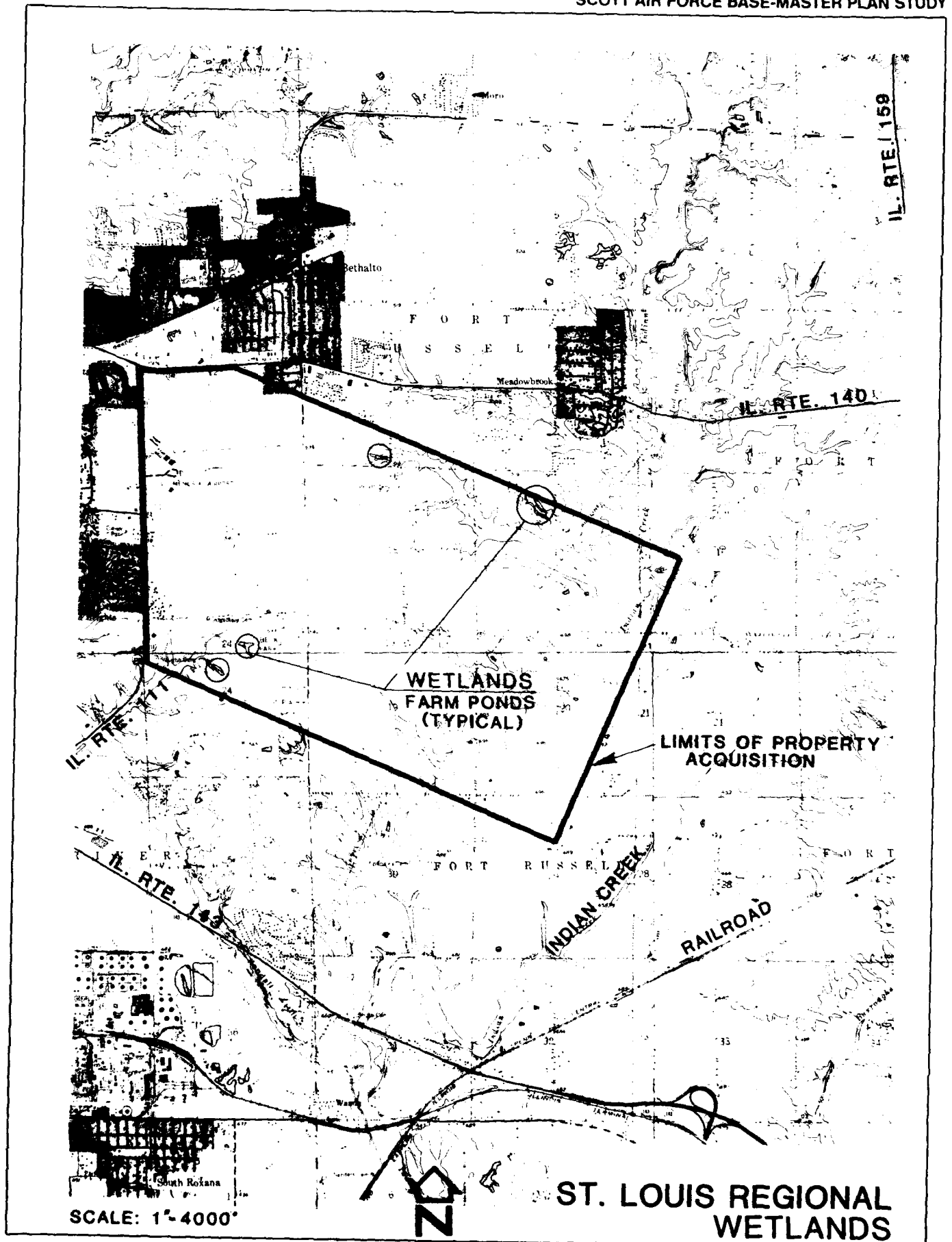
Wetlands

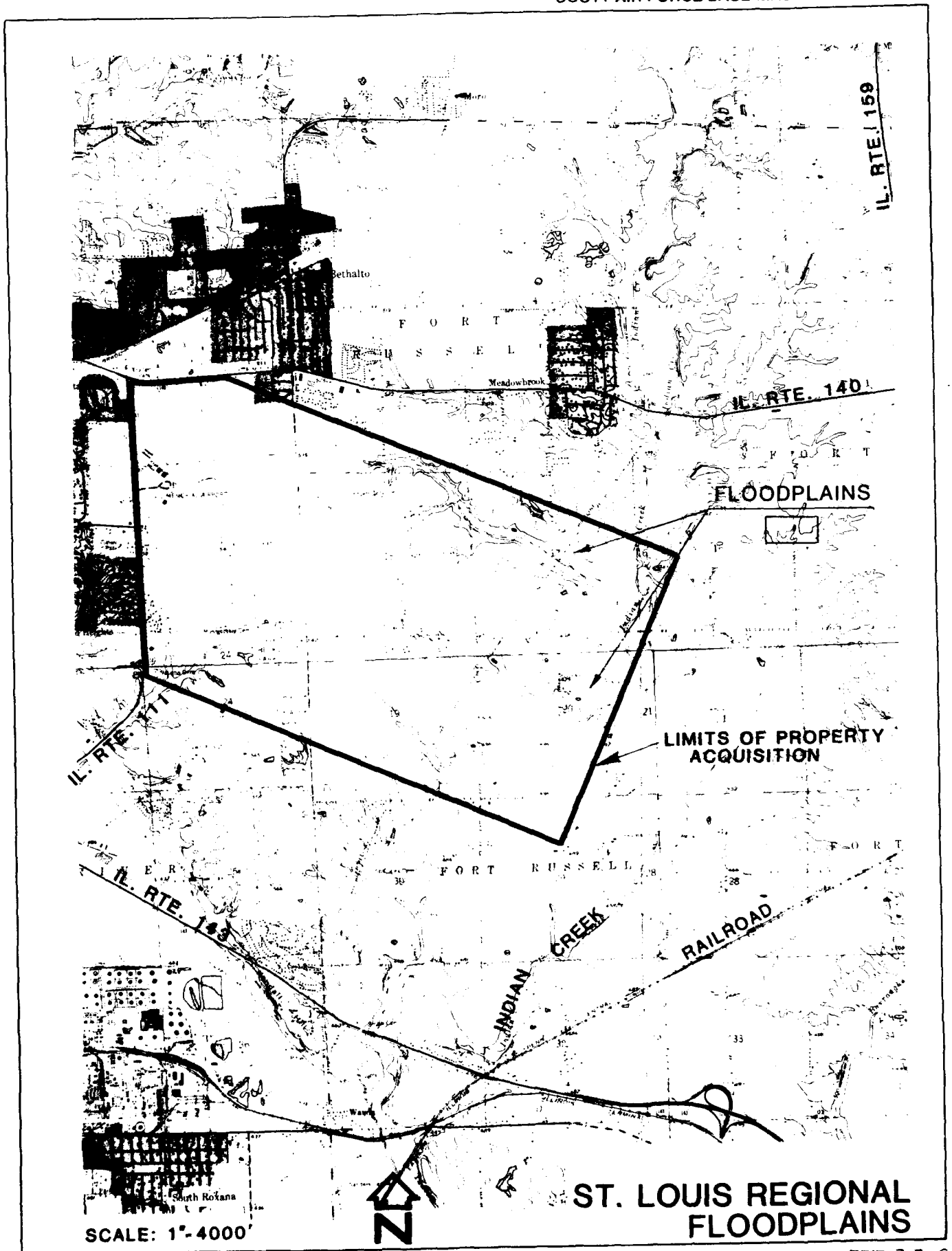
National Wetlands Inventory maps of this area are not yet available. However, site investigations and discussions with officials from the U.S. Fish and Wildlife Service and the Illinois Department of Conservation indicate the presence of wetlands. Those portions of Indian Creek, tributaries to Indian Creek and other isolated locations (natural and man-made ponds) that lie within the proposed property limits are anticipated to be included in the National Wetlands Inventory. It is estimated that those areas identified as wetlands are mainly in the northeast and southeast corners of the site and could comprise a significant portion of the proposed development site. These wetland areas are depicted on Exhibit 3.3-5.

For a general overview of the functions of wetlands, see the wetlands discussion in Section 3.1.4.

Floodplains

Three tributaries of Indian Creek are located within the boundaries of the proposed site area, and approximately 300 acres of floodplains of two of the tributaries might be impacted. These floodplains are shown shaded on Exhibit 3.3-6.





Access (See Exhibit 3.3-2)

St. Louis Regional Airport is located in Madison County approximately 5 miles east of Alton and 15 miles north of St. Louis. It is accessible from the north and south by way of IL Route 111 west of the airport.

East/West IL. Route 140 is located to the north of the airport and provides access from north/south Interstate 55 approximately 12 miles to the east.

Local rail access is limited to the Conrail/Chicago & Eastern Illinois lines located approximately 4 miles southeast.

A potential congestion problem exists due to the established urban areas north and west of the present airport facilities. These built-up areas may restrict increased capacity measures to IL Routes 111 and 140 for purposes of handling the large volume of traffic.

Significant highway improvements would need to be undertaken to provide fair access to an area which is geographically remote from the centroid of the total study area for this project.

Socio-Economic Impacts

The socio-economic impacts of the proposed project should be approximately the same regardless of which alternative is ultimately selected. However, the economic growth related to the airport expansion may occur more rapidly if the alternative selected is located near an established population center and workforce rather than a rural location.

The St. Louis Regional Airport is located in Madison County, Illinois in a mixed land use area and could show immediate economic growth in response to the proposed airport expansion. A general discussion of the economic impacts of the proposed project can be found in the socio-economic impact section of the Scott AFB alternative (see Section 3.1.4). As air traffic increases at the expanded airport, additional ground services such as car rental facilities, hotels/motels, conference centers, restaurants, couriers, etc. would be developed.

A projected outlook (1990) of some economic indicators for Madison County discloses the following information. The population will be 247,600 with a per capita personal income of \$6456.70 (1972 Constant Dollars). The major non-agricultural areas of employment will be: manufacturing 27.1%, service industries 21.8%, and trades industries 20.5%. The annual average rate of unemployment will be 8.9%, (7).

Social Impact

The social impact on the residents living within or near the St. Louis Regional Airport site would stem primarily from the displacement of residential subdivisions, rural residences, and some small businesses, the conversion of agricultural land, and increased airport activity and coincident noise levels in the vicinity of the airport.

Portions of residential subdivisions (approximately 37 residences) to the north and west of the existing airport and approximately 27 rural residences to the south and east of the existing airport would be displaced. Three churches, three cemeteries and scattered small businesses would require relocation. All relocations would be conducted in accordance with the Uniform Relocation and Assistance and Real Property Acquisition Policies Act of 1970. Approximately 75% of Belk Park located south of St. Louis Regional Airport would be included within the proposed expansion site. No major interstate highways would require re-location.

The St. Louis Regional Airport site (3,900 acres) is comprised of a mixed pattern of land use (residential, commercial, recreational, and open agricultural). Approximately 1,790 acres of the site is agricultural land. Development of commercial establishments coincident to the expansion of the airport would

remove additional acreage from production in the immediate area. A portion of the St. Louis Regional Airport site could be returned to production upon completion of the construction phase of the project.

Implementation of a coordinated noise abatement program would be required to minimize the impact of airport activity noise. This could include noise barriers and or sound proofing for homes and businesses located in the higher Ldn noise level areas.

Regular national airline and air freight service in the Madison County/East St. Louis areas as well as the resultant economic growth from the development of associated businesses would have a positive impact on the local residents. The social impact of the expansion of the St. Louis Regional Airport would depend on the acceptance of the project by the local community and a strong commitment to involve the public in the planning process.

1

FOOTNOTES

- (1) Source: USDOT/FAA Airport Master Record for St. Louis Regional Airport, September 26, 1986, page 1.
- (2) All reports provided by Julia Hertenstein (Cultural Resources Assistant) of the Illinois Historic Preservation Agency - Division of Preservation Services.
- (3) Interim Report on the Inventory of Historic Landmarks in Madison County, prepared by the Illinois Historic Landmarks Survey - Illinois Department of Conservation, May 1974.
- (4) Interim Report on the Inventory of Architecture Before WW II in Madison County (except Granite City), prepared by the Illinois Historic Structures Survey - Illinois Department of Conservation, October 1973.
- (5) Airport Environmental Handbook, DOT, FAA, October 8, 1985.
- (6) Manual of Policies and Procedures, DOT, Bureau of Location and Environment.
- (7) Southwestern Illinois Metropolitan & Regional Planning Commission (Data Resources, Inc.).

3.4 St. Louis Downtown-Parks

3.4.1 Institutional Issues

As a publicly owned airport, it is the responsibility of the sponsor to initiate any action to develop the facility to accommodate air carrier traffic.

3.4.2 Technical Issues

Airspace/Obstructions

St. Louis Downtown-Parks is located approximately 12.5 nautical miles from Lambert-St. Louis and is about 4 nautical miles southwest of the extended centerlines of Runways 30L-30R at Lambert-St. Louis as depicted in Exhibit 3.1. The TCA associated with Lambert-St. Louis passes over St. Louis Downtown-Parks at an elevation of 3,600 feet MSL, and immediately to the east, 3,000 feet MSL.

St. Louis Downtown-Parks has precision and nonprecision approaches to Runway 30L only. The initial approach altitudes are no lower than 2,200 feet MSL which is below the TCA.

Immediately to the east of the airport lies a bluff with an elevation of approximately 550 feet MSL which dominates the eastern approaches to the airport. The airport is located at an elevation of approximately 410 feet MSL. To safely clear this

bluff and meet the FAA Part 77 Imaginary Surfaces requirements specified in Table 2-1, the threshold for a new or extended runway would have to be located approximately 7,200 feet from the top of the bluff. This does not account for the possibility of there being trees or man made structures on the bluff which may have to be removed or require the further displacement of the runway threshold in order to clear them.

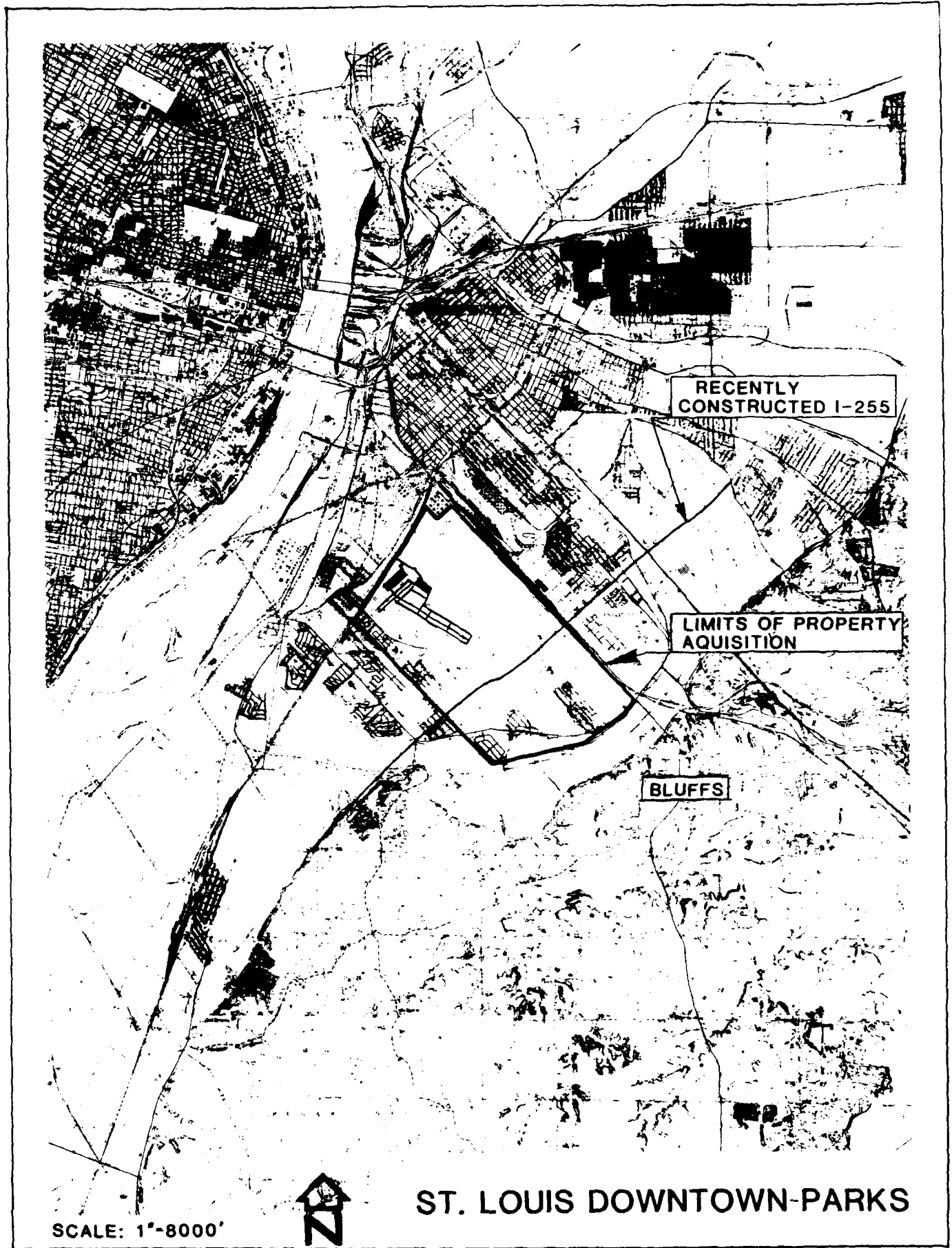
On the western end of the airport, the runway threshold would have to be displaced approximately 1,000 feet to 1,500 feet from the nearest railroad line, located under the approach to the runway, depending upon the instrument approach requirements for the runway. The natural and man made obstructions severely limit the options/flexibility for using the existing runways and pavement infrastructure at St. Louis Downtown-Parks or orienting new runways on the site.

At the commercial traffic levels which are expected, supplemental to Lambert-St. Louis, it appears that a location at Parks might require the incorporation of the Parks approaches into the Lambert-St. Louis TCA, and, in any case, require more coordination with Lambert-St. Louis than any of the other locations. It is further believed that the IFR capacity of this airport would be limited during certain weather conditions and might also interfere with IFR operations at Lambert-St. Louis.

Airport Development Requirements

The recommended site layout for the typical air carrier size airport facility described in Section 2.1.3 is depicted in Exhibit 3.4-1. The existing airport facility located at this site may be suitable for expansion to an air carrier size facility in a manner similar to St. Louis Regional Airport although to a lesser extent. The existing 5,500 foot by 100 foot runway could be extended, widened and strengthened to accommodate air carrier aircraft. However, to develop the site to accommodate air carrier aircraft would require the relocation of the newly constructed U.S. 50/I-255 and Goose Canal, both of which pass through the middle of the site. In addition, a substantial portion of the site's wetlands would require filling. The development of the site would also entail the displacement of numerous dwellings as described in further detail later in Section 3.4.4.

The air carrier runway would have to be located so as to provide a clear approach to the runway over the railroad sidings on the northwest end of the site and over the bluffs to the southeast of the site. The resultant location may barely meet obstruction clearance criteria for an air carrier type airport facility with precision approaches to both runway ends, although other off airport obstructions such as the St. Louis Arch could have an impact upon the airspace/obstruction requirements associated with this site.



Capacity

This airport is now a designated reliever for Lambert-St. Louis. Development as an air carrier airport will detract from the role as a reliever, and reduce general aviation capacity, which is already forecast to be in short supply.

3.4.3 Economic Issues (See Table 3.4-1)

Cost of Construction

Comparison of relative development cost items at St. Louis Downtown-Parks with Scott Air Force Base (Scott AFB) yields results similar to those obtained for St. Louis Regional, addressed previously. Site work and wetland mitigation costs at Parks are similar to those at St. Louis Regional (both minimal compared to Scott AFB). However, access to the Parks site presents a more complicated situation in that the recently constructed Interstate 255 crosses through the middle of the proposed site and would require relocation to accommodate the airport development.

Another development item which significantly increases the total development cost at Parks is land acquisition. Approximately 980 homes would need to be acquired in the proposed site area at a cost estimated to be approximately 22 1/2 times that estimated for Scott AFB.

COMPARATIVE COST SUMMARY USING SCOTT AIR FORCE BASE
AS A BASE OF REFERENCE

DEVELOPMENT ITEM	SCOTT AIR FORCE BASE	COLUMBIA- WATERLOO	ST. LOUIS REGIONAL	ST. LOUIS DOWNTOWN-PARKS	HIGHLAND- WINET	SHAHER- METRO EAST
1. LAND ACQUISITIONS	\$ 4M	S	H	H	S	S
2. SITEWORK	\$24M	S	L	L	S	S
3. WETLAND MITIGATION	\$21M	S	L	L	L	L
4. PAVEMENTS	\$69M	S	S	S	S	S
5. STRUCTURES	\$68M	S	S	S	S	S
6. LIGHTING & NAVAIDS	\$10M	S	S	S	S	S
7. ACCESS	\$ 6M	S	H	H	S	S
8. MISCELLANEOUS	\$15M	H	S	S	H	H
9. TOTAL	\$217M	S	S	H	S	S

* Based on Feasibility Study for Joint Military-Civilian Use of Scott Air Force Base, April 1986.

S - Same Approximate Cost L - Lower Approximate Cost H - Higher Approximate Cost

These items account for a total cost rating that is significantly higher for St. Louis Downtown-Parks than that estimated for Scott AFB.

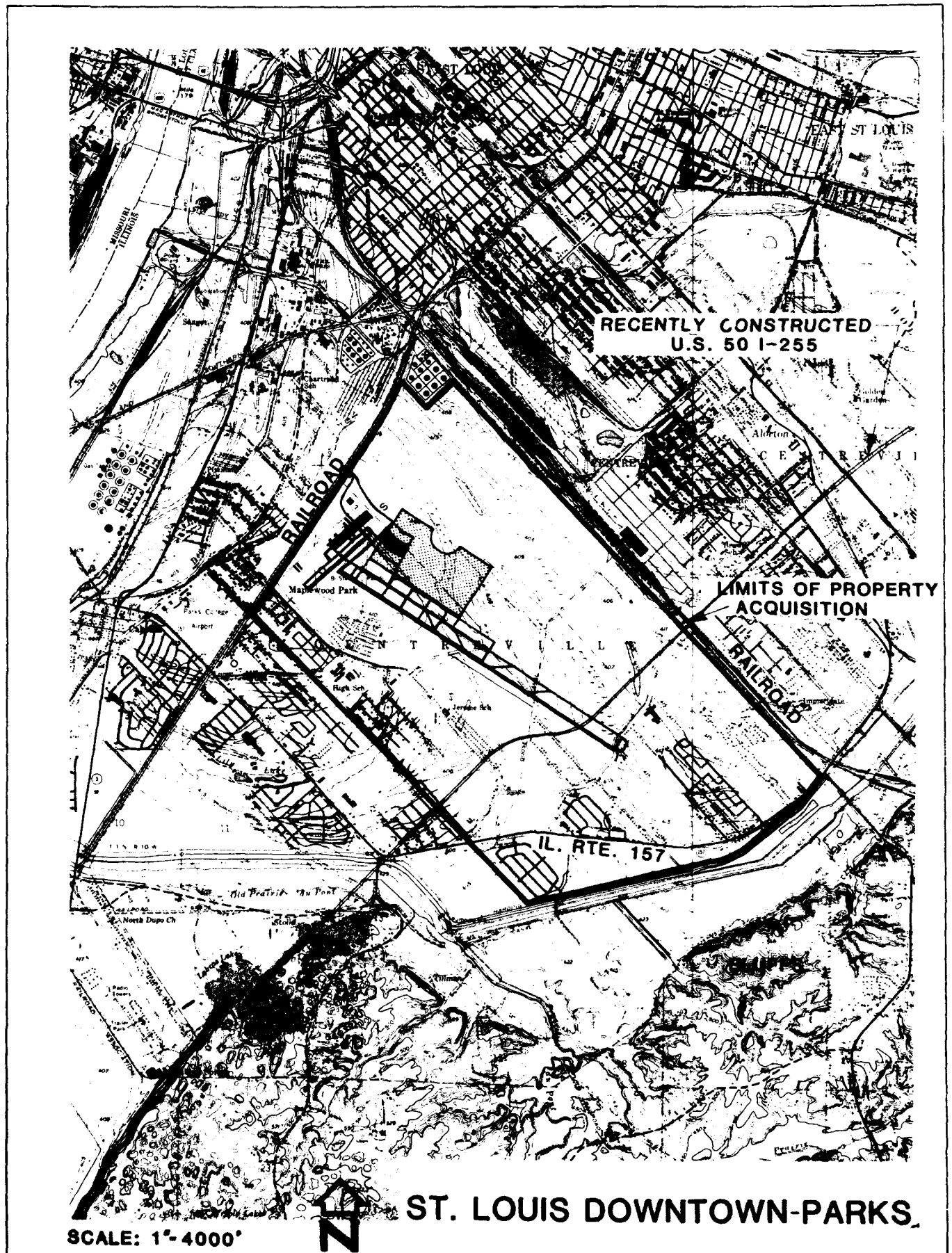
Due to the high costs associated with the relocation of existing highways and housing for the expansion of Parks to accommodate forecast air carrier/cargo traffic the Parks alternative may have significantly higher initial costs than Scott AFB in the early phase(s) of the project.

3.4.4 Environmental Issues

Land Acquisition (See Exhibit 3.4-2)

The St. Louis Downtown Parks site is comprised of approximately 3,900 acres of land within St. Clair County to serve the needs of the future airport. This acreage layout for the St. Louis Downtown-Parks Airport has taken the shape of a 17,000' x 10,000' rectangle with small adjustments on the southeast end to avoid Harding Ditch. Harding Ditch forms the southeast boundary of the proposed airport site.

General land features have been identified within this shape. They include the existing airport facilities which total 941 acres, (1) (of which 366 is aviation use, 206 vacant, 3 commercial and 366 acres of agricultural land), wetlands which cover approximately 135 acres, and urban residential housing on the



southwest as well as the southeast sides of the proposed airport site. No floodplains are delineated. Approximately 980 housing units lie within the site's property limits, thereby necessitating their purchase. Three school complexes appear in the proposed site area. One church also appears in the site area.

Other dwellings/institutions may be displaced. However, this would be determined by a detailed noise analysis performed only if this site meets evaluation criteria for further study.

Dense urban development lies immediately to the northeast and the northwest of the airport site.

Interstate 255 stretches across the middle of the site in a northeast/southwest direction dividing the proposed site into two sections of 2,200 acres to the northwest and 1,700 acres to the southeast.

Goose Canal also runs northeast/southwest across the center of the proposed airport site.

Illinois Central Gulf Railroad yards lie immediately northwest of the proposed site and an oil storage facility is immediately north of the proposed site.

Noise

This site is already a developed operational airport. As discussed under airspace, the bluff to the southeast requires that the southeast end of the runway be about 7500 feet from the bluff in order to provide for a precision approach. As a consequence, the northwest end of a 12,000 foot runway could not be southeast of the current runway ends, and the 65 Ldn noise levels from operations at the expected post-2005 level would extend northwest across the Mississippi River in the neighborhood of the City of St. Louis Hospital in St. Louis. Although much of the immediate area to the northeast is noise compatible railroad or industrial activity, churches, schools and homes on both sides of the river would be adversely affected. Some homes near the site boundary would be within the 75 Ldn noise level, and should be acquired. A Part 150 study is being considered for this location. To the southeast, sparse development would limit noise impact.

Compatible Land Use

Land use constraints include a myriad of considerations, ranging from impacts on downtown St. Louis and environs on the northwest, railroad activity on the north and west, Interstate 255 on the east, and residential development on the south and west. While expansion is already underway, it is pursued with some concern for impact on three adjacent areas. Expansion at the

anticipated level could prove infeasible, given the current limitations and the probable (adverse) reaction of the affected public.

Adjacent land uses include industrial, open agricultural, residential, and mixed urban uses (residential and commercial). Noise levels are expected to increase under existing expansion plans, impacting several residential and commercial structures as well as 4-5 churches and 102 schools. Further expansion thus indicates even greater potential for land use incompatibilities.

Historical and Archeological Locations

The St. Louis Downtown Parks area summarized below includes the cities and surrounding areas of Cahokia, Centreville and East St. Louis. These areas have been inventoried for historic landmarks, architecture and structures which are or may be eligible for nomination to the National and State Registers of Historic Places, (2). The following information is an attempt to quantify the existence of structures of historic and or pre-historic significance in the general area of the five alternative airport sites. No determinations or opinions were rendered by the staff of the Illinois Historic Preservation Agency, pertaining to the eligibility of these sites for national or state registrations.

Historic Landmarks, (3)

6 Residences
1 Church
1 Courthouse
8

Historic Architecture (Before WW II), (4)

5 Residences
10 Churches
5 Buildings
1 Theater
1 School
1 Bridge (included in the National Register of
23 Historic Places and Illinois State Register
of Historic Places)

Historic Structures, (5)

1 Residence (included in the Illinois State Register
of Historic Places)

1 Church (included in the National Register of
Historic Places and Illinois State Register
of Historic Places)

1 School
1 Courthouse (included in the Illinois State Register
of Historic Places)

The Bi-State Development Agency released an environmental impact assessment in December 1980 which contained the following information on the historical and archeological resources of the St. Louis Downtown-Parks Airport area:

"The Illinois Historic Preservation Officer, who is the Director of the Illinois Department of Conservation, has identified five structures of state historic significance in the immediate vicinity of the airport, all five of which are located in the Village of Cahokia. These are an early brick house on the

north side of 3rd Street west of Elm; Pitzman School (east side of Mississippi Avenue, north of Cahokia Street) built in 1926 and currently housing the Belleville Area College's Department of Aviation Technology; Cahokia Courthouse (southeast corner of 1st and Elm), a reconstruction of the French Upright log residence of Jean-Baptist Saucier which was constructed about 1735 and later used as the St. Clair County Courthouse; Old Holy Family Church (south side of 1st Street, east of Church), built in 1799 in the French Upright log style to replace the earlier missions dating back to 1699; and, Jarrott House (east of Old Holy Family Church), a two story brick residence built between 1799 and 1806 by Major Nicholas Jarrott, an important figure in western trade. Of these, the latter three are also in the National Register of Historic Places (1976). The National Register also lists 15 other historic sites or structures within a five-mile radius of the airport, all of which are across the Mississippi River in St. Louis, Missouri."

"The Bi-State Development Agency contracted with Southern Illinois University-Edwardsville to perform an archaeological survey of the airport site, including the land on which the proposed development is to take place. This survey was completed in August 1978. A total of six archaeological sites were recorded and material collected. None of these will be disturbed by the proposed development. In addition, the Illinois Department of Conservation has identified fourteen other sites within

approximately one mile of the airport. If archeological resources are uncovered during excavation or construction, work will be halted and the State Historic Preservation Officer will be notified and given the opportunity to investigate," (6).

The Chief Archeologist for the Illinois Department of Transportation, Bureau of Location and Environment provided the following comment on the proposed expansion site:

"No known archaeological sites are identified in the proposed airport expansion area. The oldest known historic European settlement existed in this area, which contains many old homes", (7).

Department of Transportation Act, Section 4(f)

Section 4(f) of the DOT Act provides for the protection of public parks, recreation areas, wildlife refuges and historic sites of national, state or local significance from use for transportation facilities.

It appears that no 4(f) land is in the St. Louis Downtown-Parks proposed site area.

Endangered Species

No undeveloped habitats which may be expected to support any of the county's known endangered plant or animal species were seen in the examination of the airport property and adjoining areas. One minor interaction, however, may be possible. The Snowy Egret (Egretta thula) resides in one location in Illinois about five miles from the field. At times this species, along with the somewhat more common Great Egret (Casmerodius albus) and/or the introduced (African) Cattle Egret (Bubulcus ibis), may congregate in open, grassy areas with other birds and fly off in groups of several dozen birds. One incident is known in the area of a pilot taking evasive action to avoid such a flight of (otherwise unidentified) egrets, (8). No strikes are reported, and the other species outnumber the endangered one by thousands to one, so effects should be minimal.

The St. Louis Downtown-Parks site is in the distribution range of the Indiana Bat (Myotis sodalis), a State and Federally listed endangered species. No Indiana Bats are known to reside in the St. Louis Downtown-Parks site.

Biotic Communities

Extension of the existing runway (12L-30R) to 7000 feet will take place largely on filled and/or regraded soil now maintained in rough sod. Typical meadow species such as voles (Microtus

spp.) and cottontail rabbits (Sylvilagus floridanus) may be expected to use these areas to some degree. Several thousand feet of drainage ditch (locally called the Goose Canal) maintained for the levee district runs through the approach zone and along the perimeter of the property. Male redwing blackbirds (Agelaius phoeniceus) were observed holding breeding territories and awaiting the separate female migration in the vegetation along the canal and associated ditches. Mammals attracted to standing water, such as the common muskrat, (Ondatra zibethica) may also be expected to use these ditches. This is a widespread habitat in the area. If the ditches are lost during construction, they are expected to be replaced for functional, rather than wildlife, objectives. No other habitat appears to be affected.

Farmlands (See Exhibit 3.4-3)

Potential development at the St. Louis Downtown Parks Airport could generally involve nearly level to sloping, well to poorly drained soils that formed on bottom lands. Approximately 100% of the site is made up of Class I, II or III lands, however, 30 - 40 percent is presently in urban, commercial or non-agricultural use.

A detailed breakdown of the soil classes present at the potential St. Louis Regional Airport site is shown as follows:





ST. LOUIS DOWNTOWN PARKS.

Class I - 0%

Class II - 40%

Class III - 35%

Class IV or below - 11%

Not classified - 25%

It appears that 75 percent of the land within the potential site area is suitable for cultivation having limitations that reduce the choice of plants, require moderate to very careful conservation practices, or both. Approximately 941 acres of land within the 3900-acre site is presently owned by the St. Louis Downtown Parks Airport, of which 362 acres is in agricultural use.

The remaining 25 percent of the site area has not been included in the land capability class system because it is in use for urban residential and commercial development.

Appendix E of this report further defines the eight soil classes and identifies those specific classes within St. Clair County.

Wetlands

The existing airport is located in a low, wet area that is protected by levees. No wetlands mapping is currently available for this site; however, USGS topographical mapping indicates isolated wetlands are present in this area. Discussions with

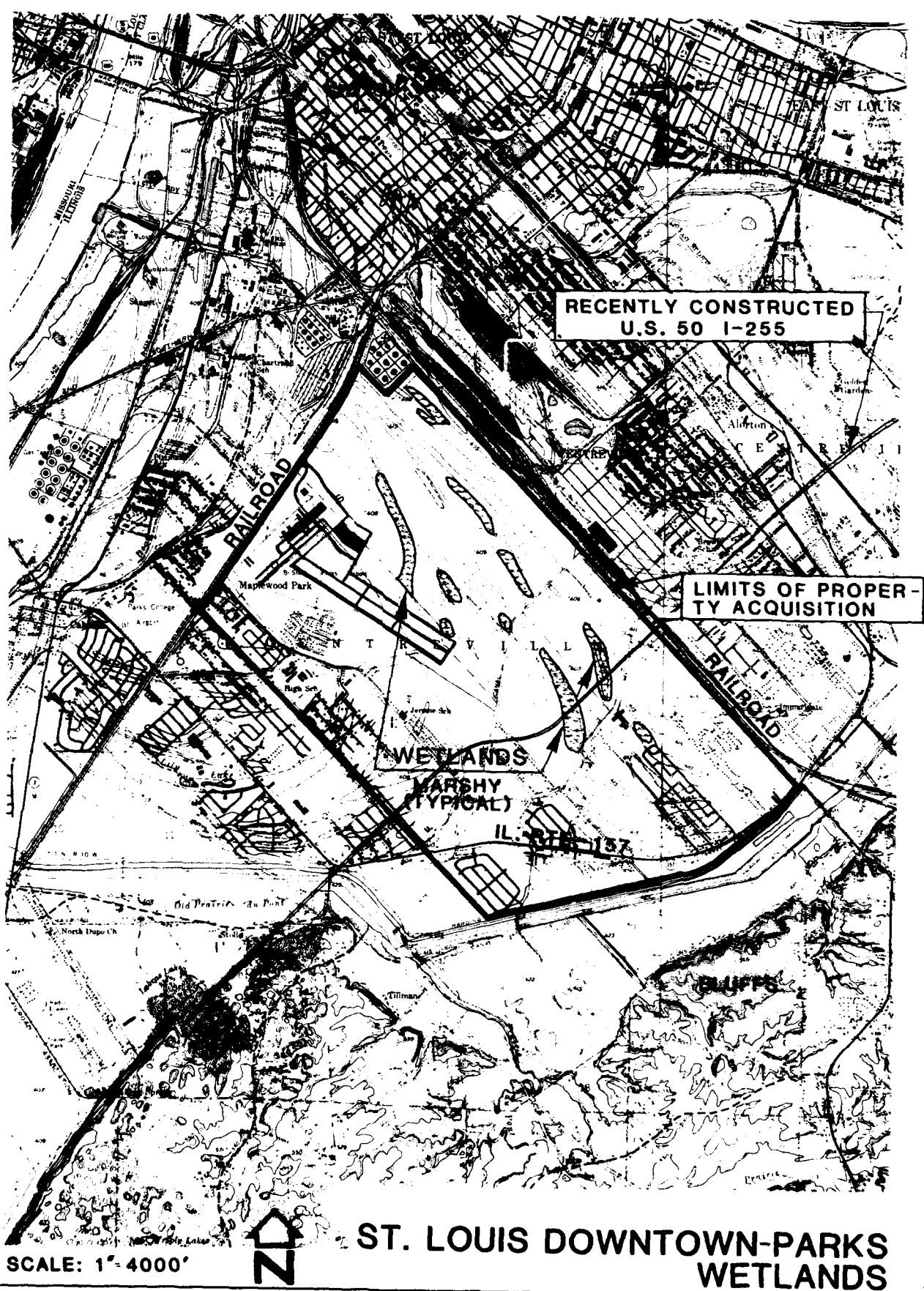
officials of the U.S. Fish and Wildlife Service indicate these areas are a conservative measure of the existing wetland areas. These wetland areas are depicted on Exhibit 3.4-4.

Floodplains

The airport is located in an area that is protected by levees, consequently floodplains evaluation is not applicable at this site.

Access (See Exhibit 3.4-2)

St. Louis Downtown-Parks Airport is located in the City of Cahokia in St. Clair County approximately 3 miles southeast of St. Louis. Newly constructed Interstate 255/U.S. 50, immediately to the southeast of the existing airport, provides quick direct access to the airport from east/west Interstate 64 to the north. Future construction will likely see I-255 extended to the north to I-270 north of Granite City. Although I-255 provides good access it bisects the proposed site, making airfield development difficult and compromising the use of this area for an expanded airport. Realignment or significant grade changes to the newly constructed I-255 would be required to allow this airport to be further developed in accordance with established criteria.



SCALE: 1" = 4000'



ST. LOUIS DOWNTOWN-PARKS WETLANDS

Immediate access to the present airport is gained via Il. Route 3 to the northwest. Camp Jackson Road (Il. Rte. 157) is approximately 1/2 mile to the southwest.

Area railroads include Illinois Central Gulf and Missouri Pacific. Each has potential direct access to the proposed site.

Socio-Economic Impacts

The socio-economic impacts of the proposed project should be approximately the same regardless of which alternative is ultimately selected. However, the economic growth related to the airport expansion may occur more rapidly if the alternative selected is located near an established population center and workforce rather than a rural location.

The St. Louis Downtown-Parks Airport site located in St. Clair County, Illinois is the most "urban" of the alternative sites and thus could show an immediate economic growth. A general discussion of the economic impacts of the proposed project can be found in the socio-economic impacts section of the Scott Air Force Base alternative (see Section 3.1.4). As air traffic increases at the expanded airport, additional ground services such as car rental facilities, hotels/motels, conference centers, restaurants, couriers, etc. would be developed.

Discussed below is a projected outlook (1990) of some economic indicators for St. Clair County. The population will be 258,500 with a per capita personal income of \$5580.60 (in 1972 Constant Dollars). The major non-agricultural areas of employment will be: government 25.3%, service industries 24.3%, and trade industries 22.9%. The annual average rate of unemployment will be 11.5%, (9).

Social Impact

The social impact on the residents living within or near the St. Louis Downtown-Parks Airport site would stem primarily from the displacement of urban residential housing units and businesses and from increased airport activity and coincident noise levels in the immediate vicinity and in downtown St. Louis. Five urban residential areas (approximately 980 residences) located in the southern portion of the site would be displaced. From the information available it appears that three schools and one church would also be displaced. All relocations would be conducted in accordance with the Uniform Relocation and Assistance and Real Property Acquisition Policies Act of 1970.

Newly constructed U.S. Interstate 255 stretches across the middle of the site in a northeast/southwest direction. Illinois Route 157 crosses near the southern limit of the expansion site. Both roadways may require relocation in order to construct the new runway.

The St. Louis Downtown-Parks Airport is being expanded currently. Noise levels are expected to increase under the current expansion plans and would increase further under the expansion described in this study. Several residential and commercial structures, as well as 4-5 churches and 102 schools, would be further impacted by the proposed expansion. Implementation of a coordinated noise abatement program would be required to minimize the impact of additional airport activity noise. This would include noise barriers and or sound proofing for structures located in the higher Ldn noise level areas. Relocation of residential units and businesses could also be considered as a method to mitigate noise impact.

Improved national airline and air freight service in the St. Clair County/East St. Louis area as well as the resultant economic growth from the development of associated businesses would have a positive impact on the local residents. The social impact of the expansion of the St. Louis Downtown-Parks Airport would depend on the acceptance of the project by the local community and a strong commitment to involve the public in the planning process.

FOOTNOTES

- (1) Source: USDOT/FAA Airport Master Record for St. Louis Downtown-Parks Airport, August 7, 1986, page 1.
- (2) All reports provided by Julia Hertenstein (Cultural Resources Assistant) of the Illinois Historic Preservation Agency - Division of Preservation Services.
- (3) Interim Report on the Inventory of Historic Landmarks in St. Clair County, prepared by the Illinois Historic Landmarks Survey - Illinois Department of Conservation, January 1975.
- (4) Interim Report on the Inventory of Architecture Before WW II in Belleville and East St. Louis in St. Clair County, prepared by the Illinois Historic Structures Survey - Illinois Department of Conservation, October 1974.
- (5) Interim Report on the Inventory of Historic Structures in St. Clair County (except Belleville and East St. Louis), prepared by the Illinois Historic Structures Survey - Illinois Department of Conservations, October 1972.
- (6) An Environmental Impact Assessment Report of Proposed Development, Bi-State Parks Airport, Cohakia, Illinois, prepared for the Bi-State Development Agency by Sverdrup/Sverdrup and Parcel.
- (7) Dr. John Walthall, Chief Archaeologist - Illinois Department of Transportation, Bureau of Location and Environment.
- (8) Interview, 14 Mar. 87, with Mr. John Roach, Manager, St. Louis Downtown Regional Airport.
- (9) Southwestern Illinois Metropolitan & Regional Planning Commission (Data Resources, Inc.)

3.5 Highland-Winet Airport

3.5.1 Institutional Issues

As a privately owned airport, a public sponsor must be identified if large scale development is to be undertaken using public funds.

3.5.2 Technical Issues

Airspace/Obstructions

The Highland-Winet site is located the furthest from Lambert-St. Louis International Airport (Lambert-St. Louis) of all the alternative sites considered. Due to the site restrictions of the existing site, the proposed site associated with this alternative has been located approximately 1.5 nautical miles to the southeast of the existing airport. Due to the obvious conflicts associated with the proposed site being in close proximity with the existing airport, Highland Airport would have to be closed in the interest of airspace compatibility and operational safety.

The proposed site associated with this alternative is located approximately 34.6NM from Lambert-St. Louis with about a 35 degree northeast offset to the extended runway centerlines connected with the Primary Runways 30L-30R at Lambert-St. Louis. Due to the

great distance from the TCA at Lambert-St. Louis, there are no known airspace problems associated with this site.

Because of the rural location of the site, there are no known obstructions to the FAA Part 77 Imaginary Surfaces as specified in Table 2-1.

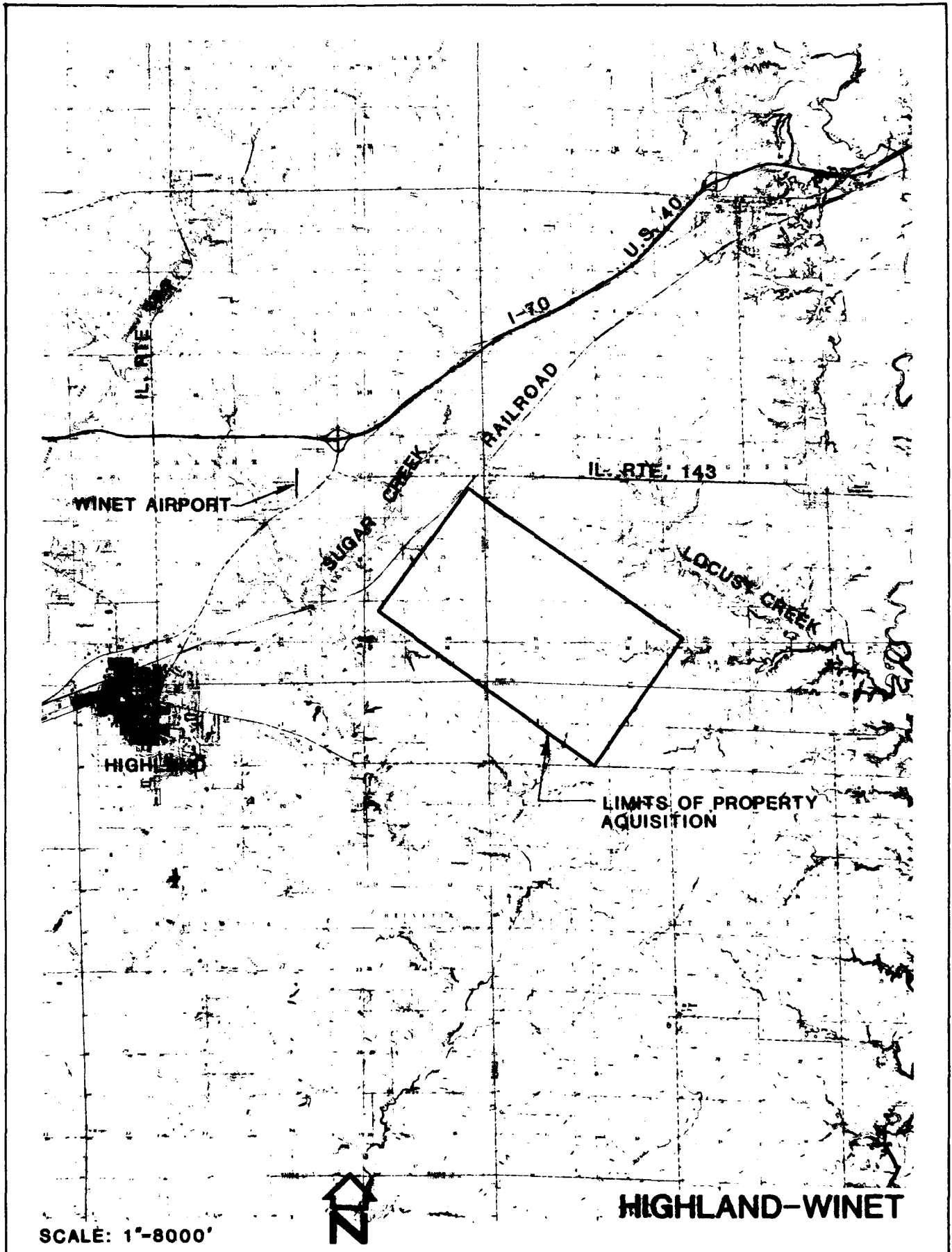
Airport Development Requirements

The limits of the site as depicted in Exhibit 3.5-1 of this section appear to be well suited to the construction of the proposed airport. The topography is possibly the flattest of all the sites. There should be no difficulty with respect to obstructions as there is little in the way of development in close proximity to this site.

Site access to an interstate system will require approximately 3 to 4 miles of four lane limited access roadway to be constructed, with bridged crossings of the Conrail Railroad, Sugar Creek and U.S. 40 or IL Route 143.

This site will by far remove the largest combined tract of farmland of all the sites considered, with the possible exception of the new airport site located near Columbia-Waterloo.

Due to the remote location of the site, utility requirements will be one of the greatest issues of the sites considered.



Capacity

While a new airport at Highland-Winet would add, with an initial single runway, an air carrier capacity of about 50 IFR operations an hour, it would be at the expense of a loss of general aviation capacity of about 100 VFR operations an hour. General aviation capacity is expected to be in short supply.

3.5.3 Economic Issues

Cost of Construction

A cost comparison analysis as depicted in Table 3.5-1 of the Highland-Winet site yields a total airport development cost relatively equal to that of the Scott Air Force Base (Scott AFB) development. Wetland mitigation costs at the Highland-Winet site appears to be substantially less than at Scott AFB. However, the relatively remote location of the Highland-Winet site makes it less desirable when considering the significant cost differences associated with the development items of the two sites which can be attributed to the remote location and lack of existing infrastructure at Highland-Winet versus Scott AFB. Miscellaneous development items such as utility access and installation are relatively higher than at Scott AFB as these items are currently not available at the Highland-Winet location.

These two development items tend to balance out making the total cost of the Highland-Winet alternative relatively equal to Scott AFB.

COMPARATIVE COST SUMMARY USING SCOTT AIR FORCE BASE
AS A BASE OF REFERENCE

DEVELOPMENT ITEM	SCOTT AIR FORCE BASE	COLUMBIA- WATERLOO	ST. LOUIS REGIONAL	ST. LOUIS DOWNTOWN-PARKS	HIGHLAND- WINET	SHAFFER- METRO EAST
1. LAND ACQUISITIONS	\$ 4M	S	H	H	S	S
2. SITEWORK	\$24M	S	L	L	S	S
3. WETLAND MITIGATION	\$21M	S	L	L	L	L
4. PAVEMENTS	\$69M	S	S	S	S	S
5. STRUCTURES	\$68M	S	S	S	S	S
6. LIGHTING & NAVAIDS	\$10M	S	S	S	S	S
7. ACCESS	\$ 6M	S	H	H	S	S
8. MISCELLANEOUS	\$15M	H	S	S	H	H
9. TOTAL	\$217M	S	S	H	S	S

* Based on Feasibility Study for Joint Military-Civilian Use of Scott Air Force Base, April 1986.

S - Same Approximate Cost L - Lower Approximate Cost H - Higher Approximate Cost

The initial cost to construct the air carrier/cargo facility at Highland-Winet will be substantially higher than at Scott AFB as noted previously because of the total lack of any existing infrastructure to use or build upon.

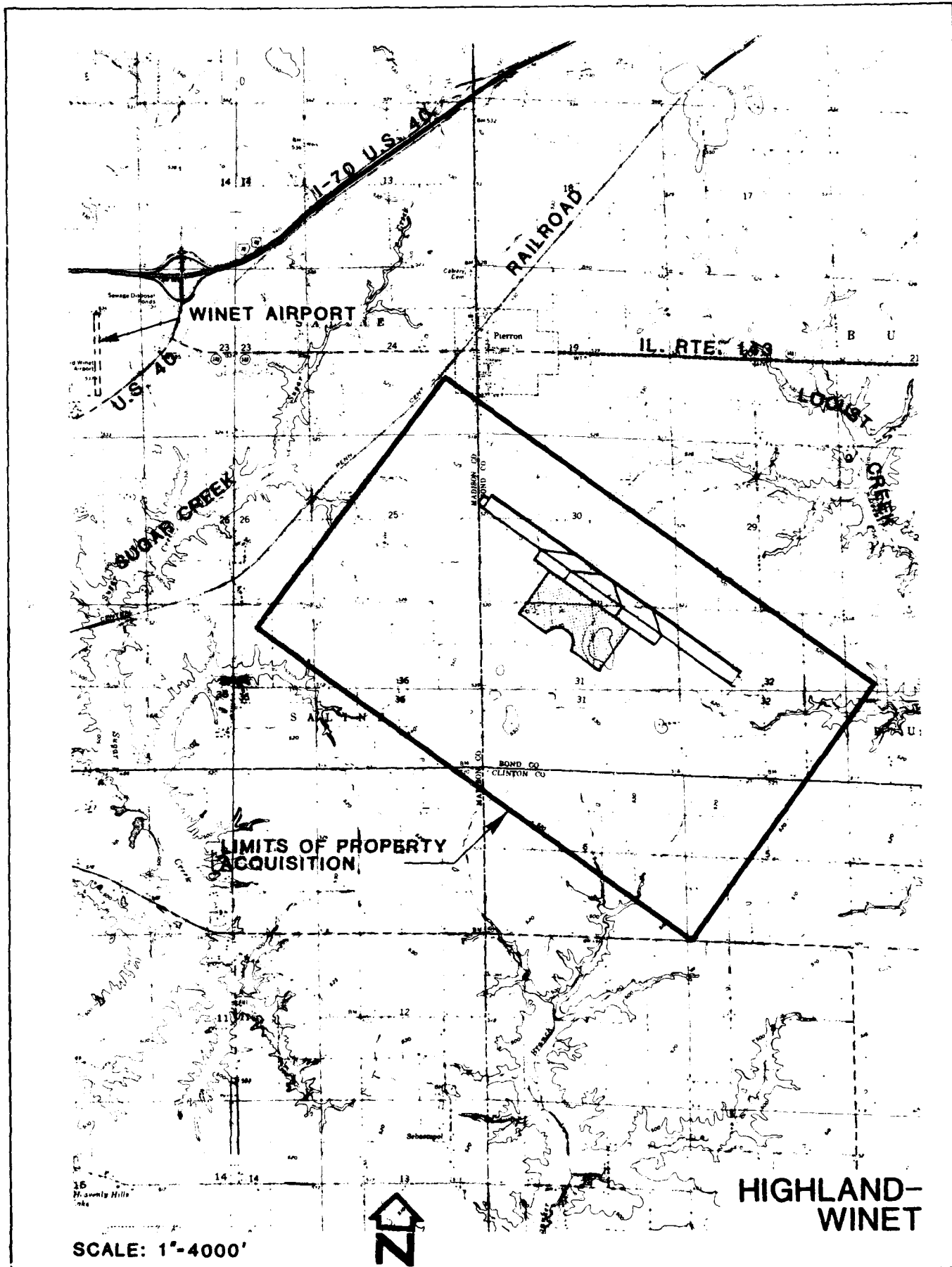
3.5.4 Environmental Issues

Land Acquisition (See Exhibit 3.5-2)

The proposed Highland-Winet site is comprised of approximately 3,900 acres of land to serve the needs of the future airport. This acreage layout has taken the shape of a 17,000' x 10,000' rectangle south and east of the existing Highland-Winet landing strip. General land features have been identified within this shape as wetlands (farm ponds), 30 approximate acres, and agricultural land spread between three counties as follows:

Bond County	2,150
Clinton County	620
Madison County	<u>1,130</u>
	3,900 Acres

Approximately 30 rural residential dwellings appear in the proposed site area. Additional dwellings within the 75 Ldn noise contour may need to be acquired, but will be the subject of a detailed noise analysis should this site be given further consideration.



Noise

The area around the Highland-Winet site is agricultural. The closest towns in the general direction of flight activity are Grantfork to the northwest and St. Rose to the southeast. Neither would be affected by noise. Noise contours of the same size as those prepared for Scott AFB are estimated to include less than 50 farm residences between 65 and 75 Ldn.

Compatible Land Use

The Highland-Winet site is located in a predominantly agricultural setting. Expansion would require the acquisition of land currently being used for agricultural purposes. The development of this site would require utilization of Interstate 70 on the north, and U.S. 40 to the west. Radio towers along U.S. 40 and sewage disposal ponds (having some safety ramifications due to potential bird strikes) also limit the land potential, to some extent. The development of this site would be essentially a new development. Major land use issues would be primarily limited to the conversion of agricultural land to commercial use. This issue can become controversial and limit the use of the site.

Historical and Archeological Locations

The Highland-Winet area summarized below includes the cities and surrounding areas of Highland and Grantfork. These areas have been inventoried for historic landmarks, architecture and structures which are or may be eligible for nomination to the National and State Registers of Historic Places, (1). The following information is an attempt to quantify the existence of structures of historic and or pre-historic significance in the general area of the five alternative airport sites. No determinations or opinions were rendered by the staff of the Illinois Historic Preservation Agency, pertaining to the eligibility of these sites for national or state registrations.

Historic Landmarks, (2)

2 Residences
3 Buildings
5

Historic Architecture (Before WW II), (3)

Residences
4 Buildings
1 Library
13

Historic Structures

None Listed

TOTAL 18 items

Department of Transportation Act, Section 4(f)

Section 4(f) of the DOT Act provides for the protection of public parks, recreation areas, wildlife refuges and historic sites from use for transportation facilities.

It appears that no 4(f) land is in the proposed Highland-Winet site area.

Endangered Species

No undeveloped habitats which may be expected to support any of the county's known endangered plant or animal species were seen in the examination of the airport property and adjoining areas. No indirect interactions are known or postulated.

The Highland-Winet site is in the distribution range of the Indiana Bat (Myotis sodalis), a State and Federally listed endangered species. No Indiana Bats are known to reside in the Highland-Winet site.

Biotic Communities

Two types of communities would be lost if development took place on this site. The first would be approximately 900-1100* acres of average to above average farm field habitat. Many fields are not clean tilled; some corners and fence rows are kept. The second type of habitat is a forest remnant/water edge of average

value. Several thousand lineal feet of tree-lined drainage way would be displaced. This habitat is above average for the area, and upland wildlife are likely to make heavy use of it.

*Author's estimate based on likely actual construction area.

Farmlands (see Exhibit 3.5-3)

Available soil survey information was obtained from the District Conservation Office to determine soil types. The potential development site near the existing Highland-Winet Airport generally contains nearly level to moderate sloping, poorly drained soils that have a moderately slowly permeable subsoil.

Approximately 80% of the 3,900 acres (\pm) within the potential development site are classified as Class I, II, or III lands. See the Appendix for detailed soil class information and Bond, Madison and St. Clair County soils maps.

A detailed breakdown of the soil classes present at the potential Highland-Winet Airport is shown following:

Class I - 0%

Class II - 20%

Class III - 60%

Class IV or below - 20%

HIGHLAND-WINET

CLASS I

NONE

CLASS II

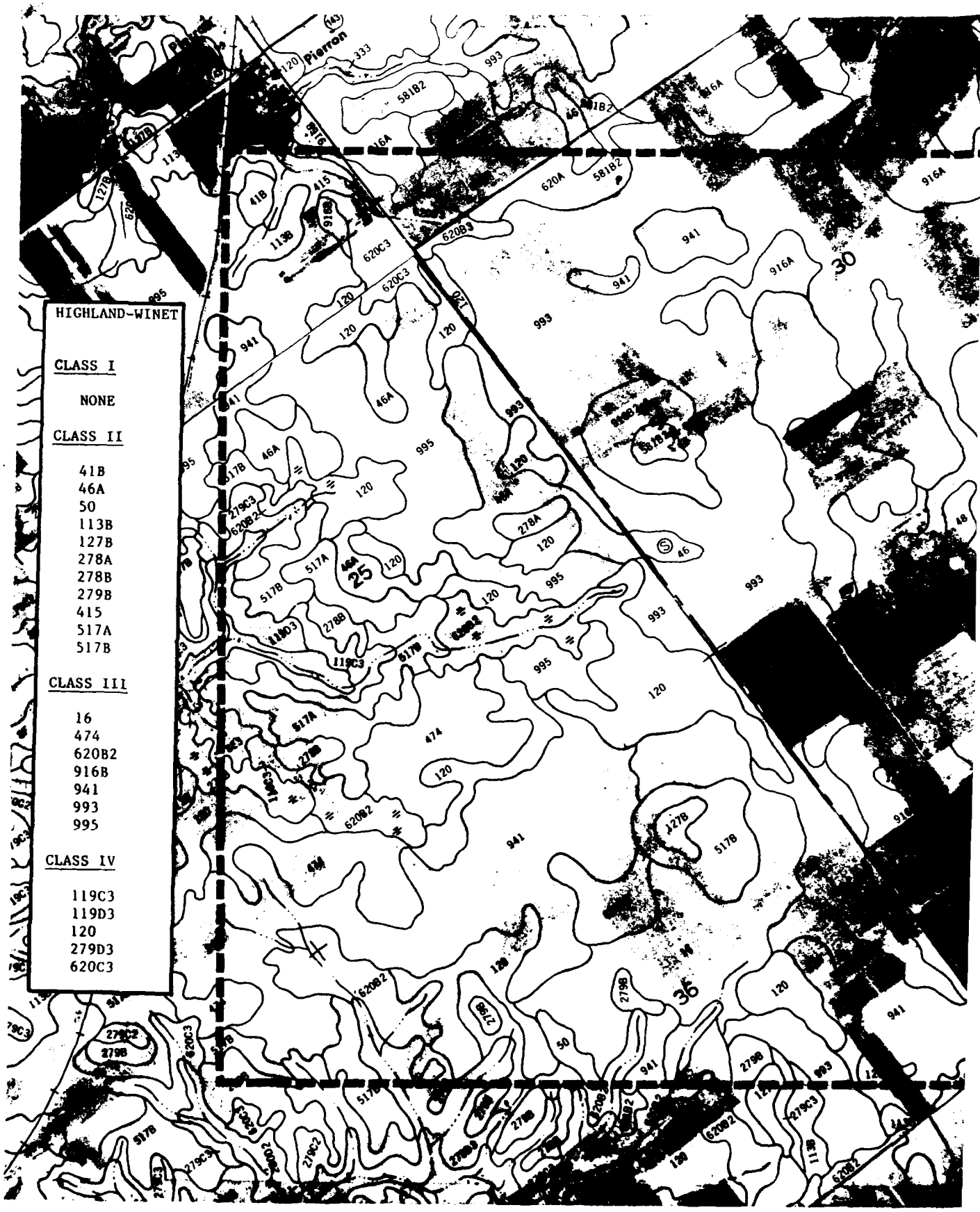
41B
46A
50
113B
127B
278A
278B
279B
415
517A
517B

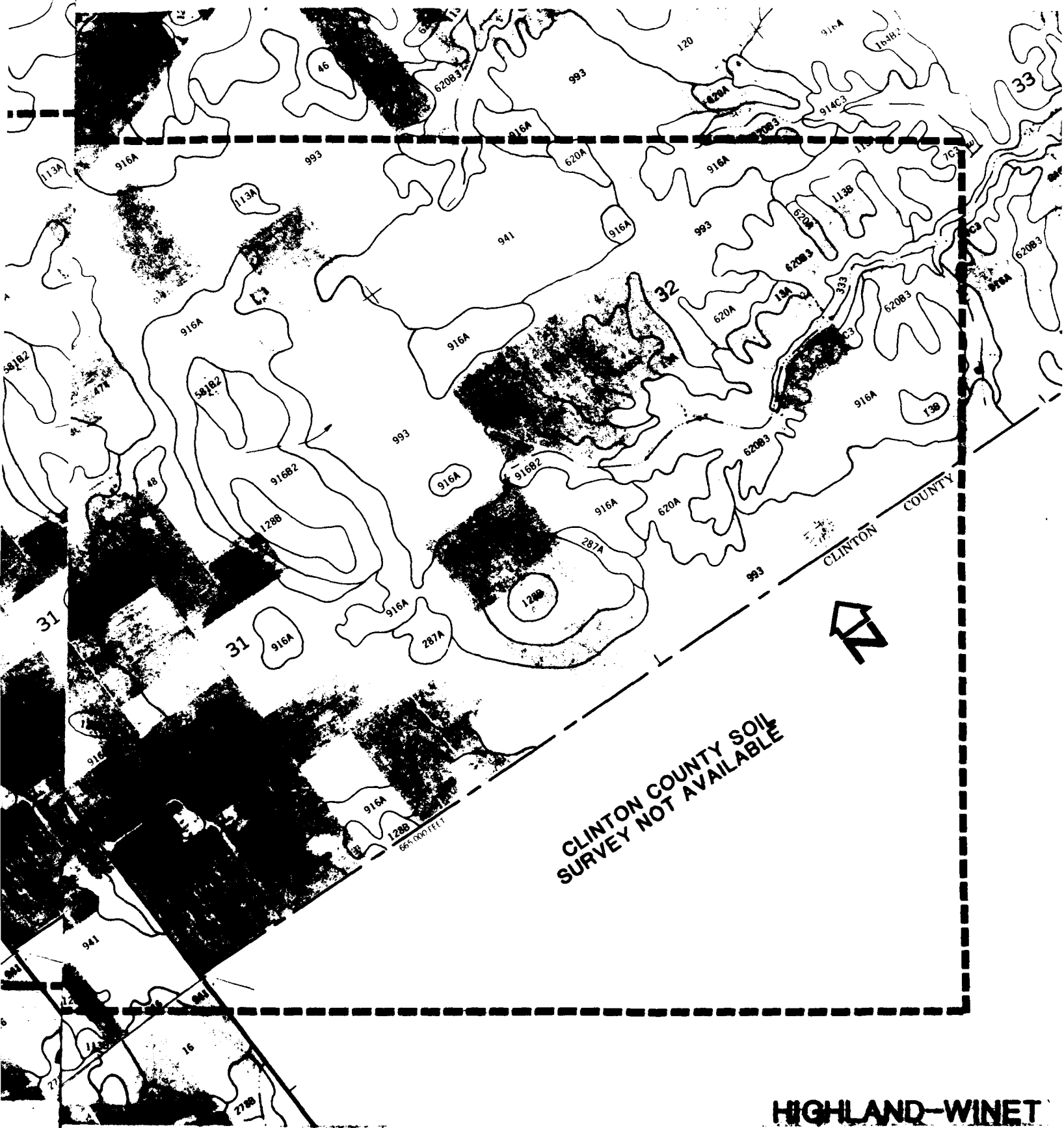
CLASS III

16
474
620B2
916B
941
993
995

CLASS IV

119C3
119D3
120
279D3
620C3





It appears that all land within the potential site area is suitable for cultivation having limitations that reduce the choice of plants, require moderate to very careful conservation practices, or both.

Wetlands

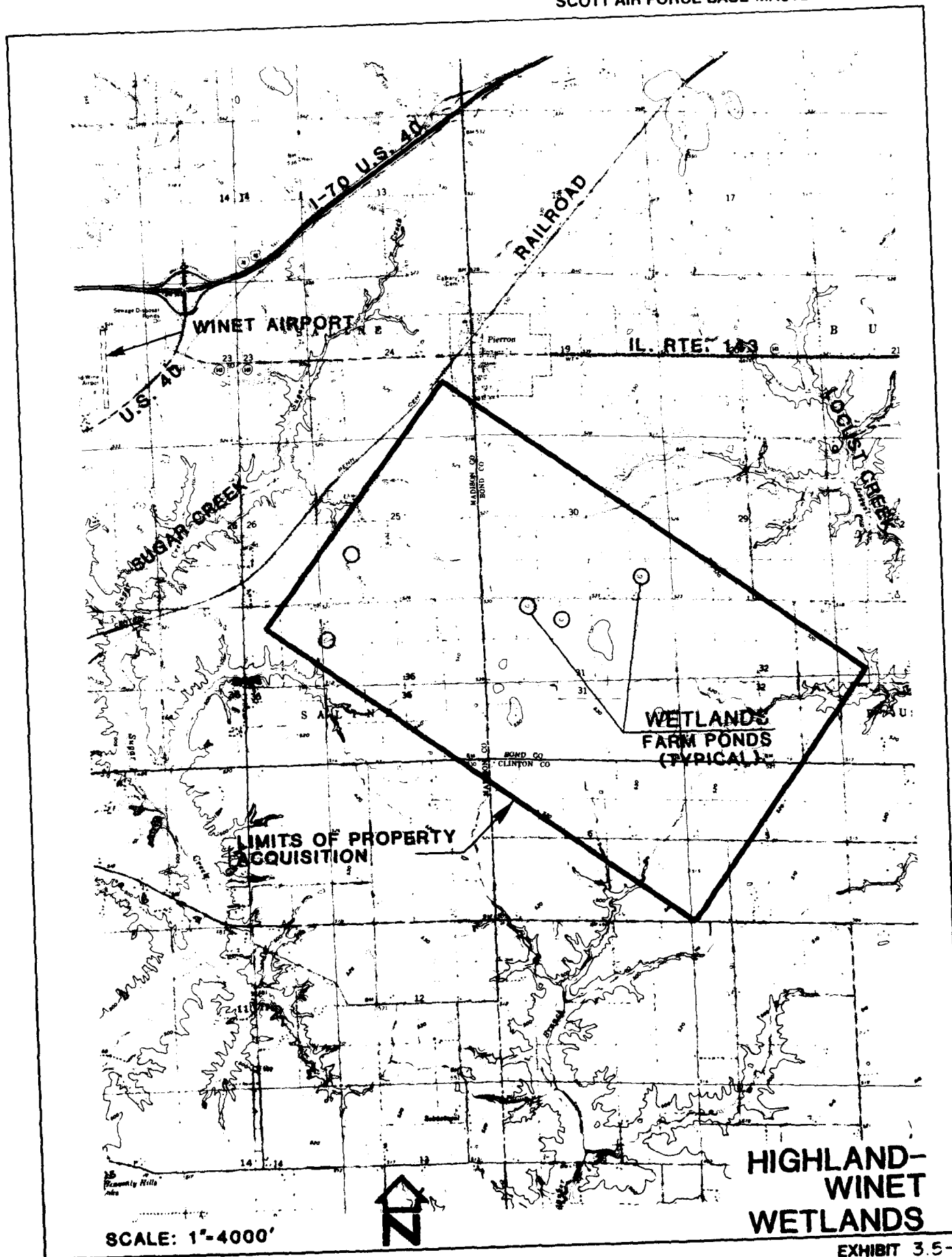
Minimal wetlands are reported in the vicinity of the proposed 3900 acre site located southeast of the current airport. Within the proposed site limits, the preliminary inventory of wetlands indicated isolated locations of wetland areas, small farm ponds, shown as circles on Exhibit 3.5-4. These areas comprise less than 1% of the minimum property acquisition area.

Floodplains

Exhibit 3.4-2 depicts the limits of the proposed 3900 acre property acquisition. Within these limits, there does not appear to be any floodplain areas.

Access (See Exhibit 3.5-2)

The existing Highland-Winet Airport is located approximately two miles northeast of the community of Highland. This airport is identified as airport #1 on Exhibit 2.2-1. The Highland-Winet Airport is located approximately 40 miles northeast of downtown St. Louis in the eastern part of Madison County.



Access to the potential 3900 acre airport site located approximately 3 miles southeast of the current Highland-Winet Airport would be from Interstate 70/U.S. Route 40 located approximately 4 miles north of the existing Highland-Winet Airport.

Because of the 3,900-acre land requirement, a 17,000' x 10,000' proposed property area for a potential airport was located southeast of the current airport (see Exhibit 3.5-2) so as to be removed from the Sugar Creek drainage area and to avoid significant highway relocation. Avoiding other drainage courses to the southeast causes the airport to cross three county boundaries. Located northwest and parallel to the proposed site is the Conrail rail line.

Based upon an analysis of the proposed airport site area, access to this alternate site appears to be poor. A bridge would likely need to be erected over Sugar Creek with highway crossings at IL Route 143 and the Conrail Railroad tracks. These improvements would utilize the existing interchange. Displacement of additional housing units may be of necessity. Three (3) county road systems may need to be altered as a result of this project. Relative to the St. Louis region and geographic centroid of the total study area, travel distance to the proposed site is fair.

Socio-Economic Impacts

The socio-economic impacts of the proposed project should be approximately the same regardless of which alternative is ultimately selected. However, the economic growth related to airport development may occur more rapidly if the alternative selected is located near an established population center and workforce rather than a rural location.

The area is basically rural in character. The expansion of the existing airport would accelerate industrial and residential growth in the area. As traffic grows, the need for ground services will expand, leading to car rental facilities, overnight lodging, restaurants, etc. Undoubtedly, there will be people desirous of maintaining the current rural atmosphere who will react adversely to these changes. However, the changes will occur gradually over time. Because of the proximity to a major metropolitan area, similar changes will probably occur eventually in any case. The addition of an airport will affect the timing, and, to some extent, the character of the socio-economic changes.

The Highland-Winet Airport expansion site is located in Madison County, Illinois which will have an estimated population of 247,600 in 1990. Below are some general socio-economic estimates (1990) for Madison County. The per capita income will be \$6456.70 (1972 constant dollars). The major non-agricultural

areas of employment will be manufacturing 27.1%, services 21.8%, and the trades 20.5%. It is projected that Madison County will have an annual average unemployment rate of 8.9%.

The occupational distribution (1980) for Madison County indicates the following workforce breakdown: white collar 48.9%, services 13.7%, and blue collar 37.4%, (4). For a general discussion of the economic impacts of an airport development and its ancillary development see the Socio-Economic Impacts section under the Scott Air Force Base alternative (see Section 3.1.4).

Social Impacts

The social impacts on the residents living within or near the Highland-Winet Airport site would stem primarily from the displacement of rural residences, the conversion of agricultural land, and increased aircraft activity and coincident noise levels in the vicinity of the airport.

No established communities would require relocation to expand the airport. Approximately 30 rural homes would be displaced. From the information available, it does not appear that any churches, public facilities, parks or recreational facilities would be impacted. All relocations would be conducted in accordance with the Uniform Relocation and Assistance and Real Property Acquisition Policies Act of 1970. Area traffic patterns would not be significantly altered and no major interstate highways or primary roads would require location.

The Highland-Winet Airport site (3,900 acres) and the surrounding area is primarily agricultural land. Development of commercial establishments coincident to the expansion of the airport would remove additional acreage from production in the immediate area. A portion of the Highland-Winet Airport site could be returned to production upon completion of the construction phase of the project.

Implementation of a coordinated noise abatement program would be required to minimize the impact of airport activity noise. This could include noise barriers and or sound proofing for homes located in the higher Ldn noise level areas.

Regular national airline and air freight service in the Madison County area as well as the resultant economic growth from development of associated businesses would have a positive impact on the local residents. The social impact of the expansion of Highland-Winet Airport would depend on the acceptance of the project by the local community and a strong commitment to involve the public in the planning process.

FOOTNOTES

- (1) All reports provided by Julia Hertenstein (Cultural Resources Assistant) of the Illinois Preservation Agency - Division of Preservation Services.
- (2) Interim Report on the Inventory of Historic Landmarks in Madison County, prepared by the Illinois Historic Landmarks Survey - Illinois Department of Conservation, May 1974.
- (3) Interim Report on the Inventory of Architecture Before WW II in Madison County (except Granite City), prepared by the Illinois Historic Structures Survey - Illinois Department of Conservation, October 1973.
- (4) Southwestern Illinois Metropolitan & Regional Planning Commission (Data Resources, Inc.).

3.6 Shafer-Metro East

3.6.1 Institutional Issues

As a privately owned airport, a public sponsor must be identified if large scale development is to be undertaken using public funds and the airport designated as a reliever airport.

3.6.2 Technical Issues

Airspace/Obstructions

Shafer-Metro East is located approximately 25.5 nautical miles from Lambert-St. Louis International Airport (Lambert-St. Louis), 10.5 nautical miles from Scott AFB and offset about 30 degrees northeast from the extended runway and centerlines of the Primary Runways 30L-30R at Lambert-St. Louis and Runway 12 at Scott AFB. The site is located outside the Lambert-St. Louis TCA as shown in Exhibit 3.1 and should pose no airspace problems.

Shafer-Metro East currently has a single nonprecision circling approach to the airport. With an initial approach altitude of 2,300 feet MSL, it does not have an impact upon the airspace associated with the Lambert-St. Louis TCA. However, Shafer-Metro East has apparently experienced difficulty in obtaining an approved Nondirectional Radio Beacon (NDB) straight-in approach due to apparent conflicts with Scott AFB airspace.

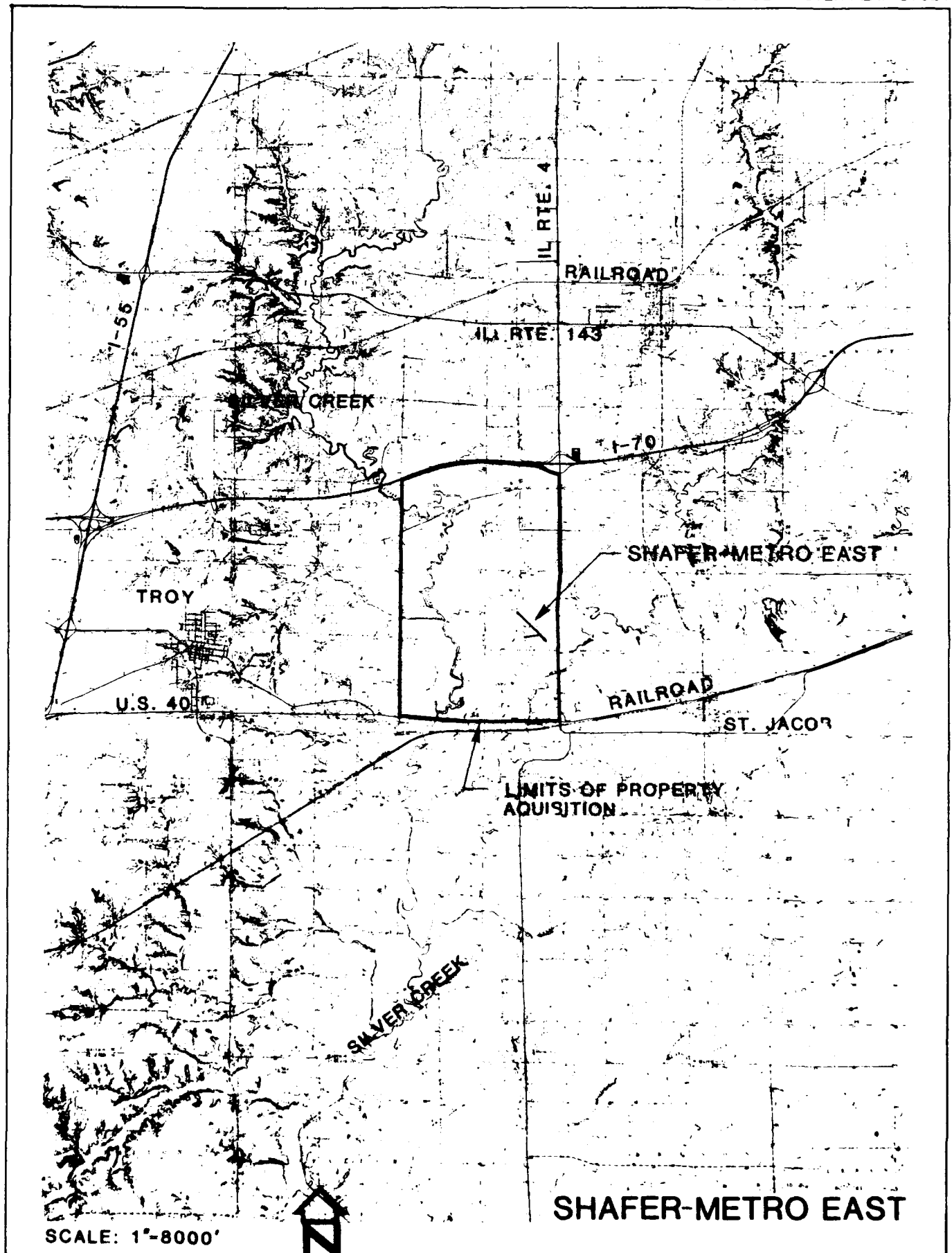
Even though the site is bordered on the north by I-70 and on the south by rail lines, there should be no problems with meeting the FAA Part 77 Imaginary Surfaces requirements specified in Table 2-1 due to the overall rural nature of the site.

Airport Development Requirements

The existing airport offers little in expansion capability for the new air carrier airport. The site depicted in Exhibit 3.6-1 will accommodate the minimum air carrier facility being considered. However, due to the large size of the Silver Creek floodplain and related wetlands, the site would probably have a substantial impact associated with the long-term construction of a parallel runway system. While this is not a requirement for the forecasted demand, it is nonetheless a limitation of the site's future capability to accommodate possible expansion requirements beyond that forecasted without great expense to mitigate the environmental impacts. Due to the remote location of this site, utility requirements will be substantial.

Capacity

The development of air carrier capacity at Shafer-Metro East would be at the expense of general aviation capacity. With the current general aviation system, general aviation capacity is forecast to be in short supply.



3.6.3 Economic Issues

Cost of Construction

Initial cost comparison analysis of the Shafer-Metro East site development as depicted in Table 3.6-1 yields a total project cost relatively equal to that estimated for the Scott AFB site development.

Wetland mitigation measures appear less costly for the Shafer-Metro East site in the short term. However, future development of this location beyond the 20-year planning period will require extensive wetland mitigation procedures should implementation of a parallel or crosswind runway be warranted. Approximately 950 acres in the west half of the proposed site is contained within the Silver Creek wetlands with an additional 1050 acres contained in the Silver Creek floodplains.

The initial costs to construct the facility will be high due to the lack of existing infrastructure and the remote location of this site. Therefore, the initial development will require a substantial expenditure of funds to establish the basic air carrier/cargo airport facility as compared to Scott AFB.

COMPARATIVE COST SUMMARY USING SCOTT AIR FORCE BASE
AS A BASE OF REFERENCE

DEVELOPMENT ITEM	SCOTT AIR FORCE BASE	COLUMBIA- WATERLOO	ST. LOUIS REGIONAL	ST. LOUIS DOWNTOWN-PARKS	HIGHLAND- WINET	SHAHER- METRO EAST
1. LAND ACQUISITIONS	\$ 4M	S	H	H	S	\$
2. SITEWORK	\$24M	S	L	L	S	\$
3. WETLAND MITIGATION	\$21M	S	L	L	L	L
4. PAVEMENTS	\$69M	S	S	S	S	\$
5. STRUCTURES	\$68M	S	S	S	S	\$
6. LIGHTING & NAVAIDS	\$10M	S	S	S	S	\$
7. ACCESS	\$ 6M	S	H	H	S	\$
8. MISCELLANEOUS	\$15M	H	S	S	H	H
9. TOTAL	\$217M	S	S	H	S	\$

* Based on Feasibility Study for Joint Military-Civilian Use of Scott Air Force Base, April 1986.

S - Same Approximate Cost L - Lower Approximate Cost H - Higher Approximate Cost

3.6.4 Environmental Issues

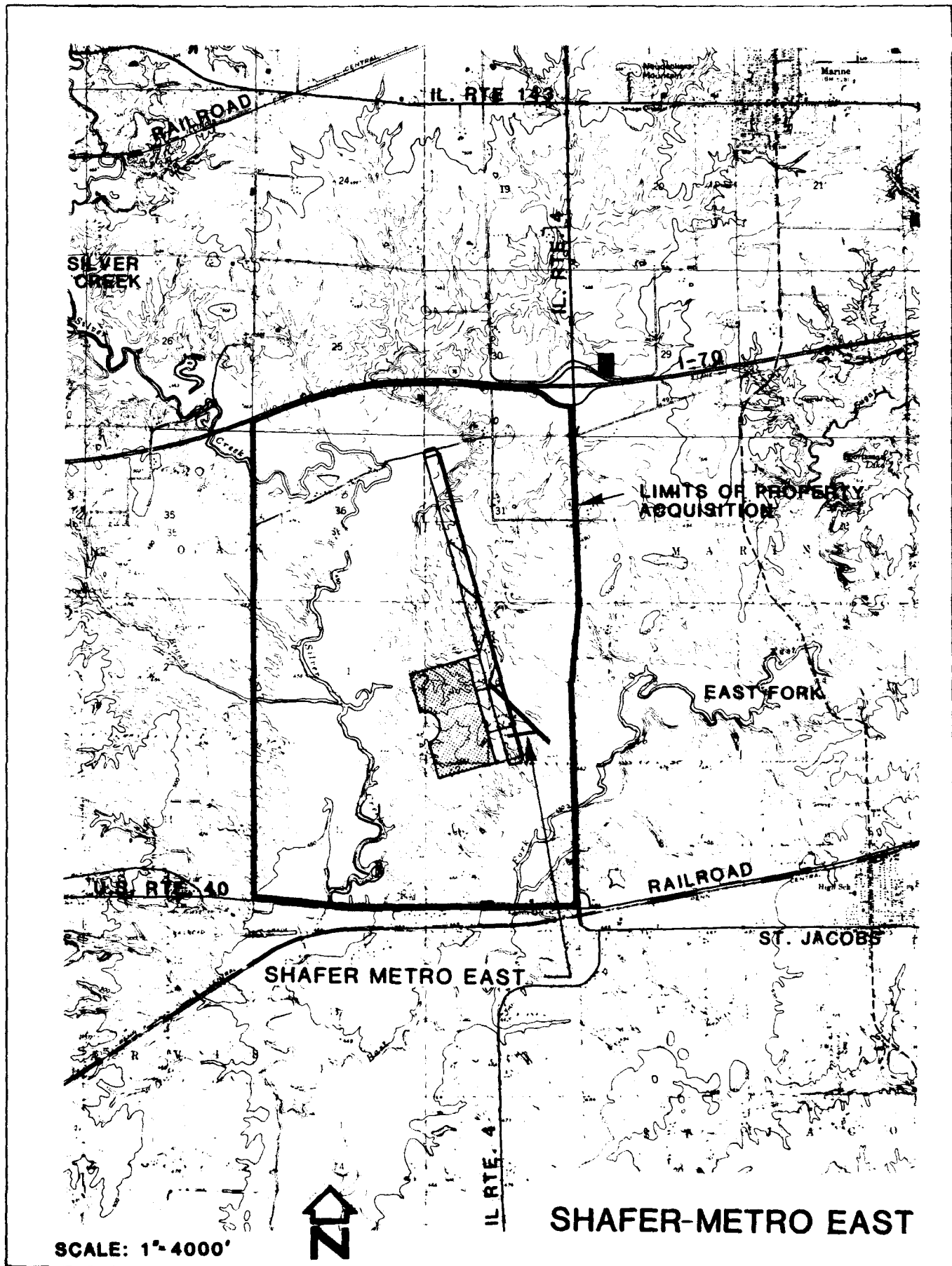
Land Acquisition (see Exhibit 3.6-2)

The Shafer-Metro East alternate is comprised of approximately 3,900 acres of land to serve the needs of the future airport. The acreage layout for the Shafer-Metro East Airport has taken the shape of a 17,000' x 10,000' rectangle. General land features of this shape within Madison County have been identified as agricultural, approximately 1874 acres; the airport facilities, 26 acres; (1) floodplains, approximately 2,000 acres of which wetlands make up approximately 950 acres. A portion of Silver Creek and several smaller scattered streams and woodlands traverse the site.

Approximately 37 rural residential dwellings and one school appear in the proposed site area. The possibility for further acquisitions would be limited to areas within the proposed 75 Ldn noise contour. The generation of this contour would be the subject of a detailed study should this site be given further consideration.

Noise

The area around the Shafer-Metro East site is largely agricultural. Significant noise impacts on the small town of St. Jacobs to the southeast can be avoided by appropriate runway



placement. Consequently, contours for civil aviation of the same size as those prepared for Scott AFB would be expected to have a similar impact, i.e. approximately 40-50 farm residences between 65 and 75 Ldn. A discussion of the meaning and significance of Ldn will be found in Appendix D.

Compatible Land Use

The Shafer-Metro East site (Exhibit 3.6-2) is the most rural of the current sites under consideration. The adjacent land uses are entirely agricultural. Sufficient, unconstrained land is available for the expansion of this site without conflict in land use, if the planned expansion is carefully designed. The major issue at this site would involve the removal of farm land from production and impacts on the drainage area to the east. Land adjacent to IL Route 4 could support the development of the site. IL Route 4 joins Interstate 70 to the north of the proposed site at an existing interchange. It is so heavily utilized that expanding to four lanes is a feasible option. This site is also at a primitive stage of development, only slightly more developed than Highland-Winet, but has many advantages, i.e. topography, transportation, and adjacent uses. The major land use issue if the drainage areas can be avoided, will involve converting an agricultural area to a commercial setting. If the expansion includes the stream and drainage areas, there could be controversy over impacts on the natural area affected.

Historical and Archeological Locations

The Shafer-Metro East area summarized below includes the cities and surrounding areas of St. Jacob and Marine. These areas have been inventoried for historic landmarks, architecture and structures which are or may be eligible for nomination to the National and State Registers of Historic Places, (2). The following information is an attempt to quantify the existence of structures of historic and or pre-historic significance in the general area of the five alternative airport sites. No determinations or opinions were rendered by the staff of the Illinois Historic Preservation Agency, pertaining to the eligibility of these sites for national or state registrations.

Historic Landmarks, (3)

- 1 Residence
- 1 Building
- 2

Historic Architecture (Before WW II), (4)

- 4 Residences
- 1 Church
- 3 Buildings
- 1 School
- 1 Grain Silos (1 Set)
- 10

Historic Structures

None Listed

Total 12 Items

No known archeological sites have been identified in the proposed airport expansion area, (5).

Department of Transportation Act, Section 4(f)

Section 4(f) of the DOT Act provides for the protection of public parks, recreation areas, wildlife refuges and historic sites from use for transportation facilities

It appears that no 4(f) land is in the Shafer-Metro East proposed site area.

Endangered Species

No undeveloped habitats which may be expected to support any of the county's known endangered plant or animal species were seen in the examination of the airport property and adjoining areas. No indirect interactions are known or postulated.

The Shafer-Metro East site is in the distribution range of the Indiana Bat (Myotis sodalis), a State and Federally listed endangered species. No Indiana Bats are known to reside in the Shafer-Metro East site.

Biotic Communities

The total study area contains a wide variety of habitats. If development is limited to the upland areas adjacent to IL Route 4, then all areas to be lost to development are clean-tilled farm

fields of below average wildlife value. No corners or fence rows are available; no water features other than field ditches exist. If, for operational reasons, a longer NW/SE runway is required, then several hundred acres of floodplain lands, about one-half of it in low-quality second growth forest, would be lost or severely disturbed. This loss would be considered locally important. About 350 acres of important floodplain forest of higher value is located in the SE corner of the study area. If construction activities were to take this community, the local loss must be considered very important. Both streams are part of the Silver Creek drainage basin.

Farmlands (See Exhibit 3.6-3)

The Shafer-Metro East site generally contains nearly level, somewhat drained soils that are moderately permeable, formed of sediment in the Silver Creek flood plain. The site is also made up of gently sloping to steep, well drained soils that have moderately permeable soil, formed on uplands. Approximately 95% of these soils are Class I, II and III lands.

A detailed breakdown of the soil classes present at the proposed Shafer-Metro East site is shown as follows:

Class I - 0%

Class II - 45%

Class III - 50%

Class IV or below - 5%





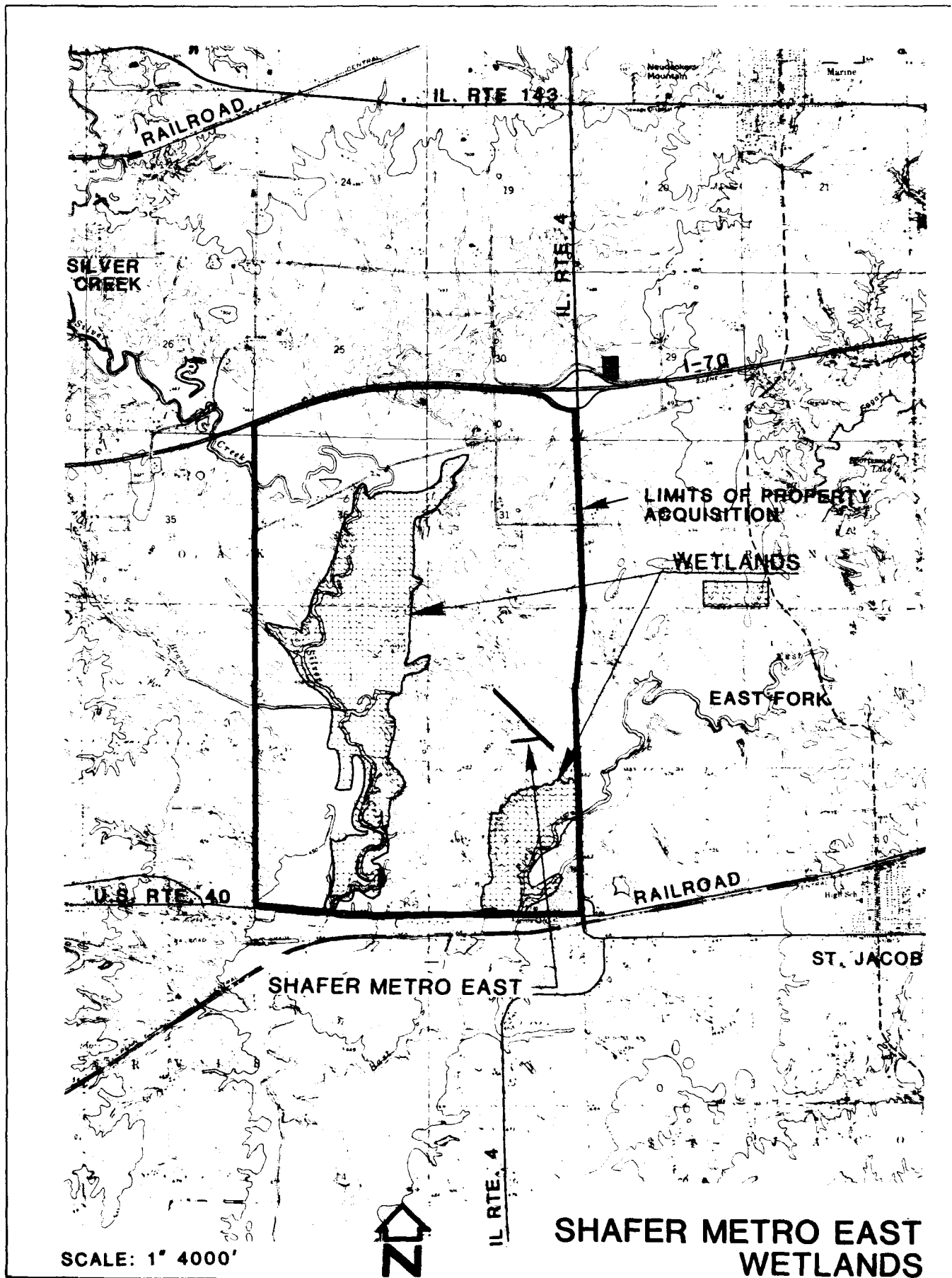
It appears that almost all the land within the potential site area is suitable for cultivation having limitations that reduce the choice of plans, require moderate to very careful conservation practices, or both. Twenty-six acres of the potential site is presently in aviation use for the Shafer-Metro East Airport. Appendix E of this report further defines the eight major soil classes and identifies those specific classes within Madison County.

Wetlands

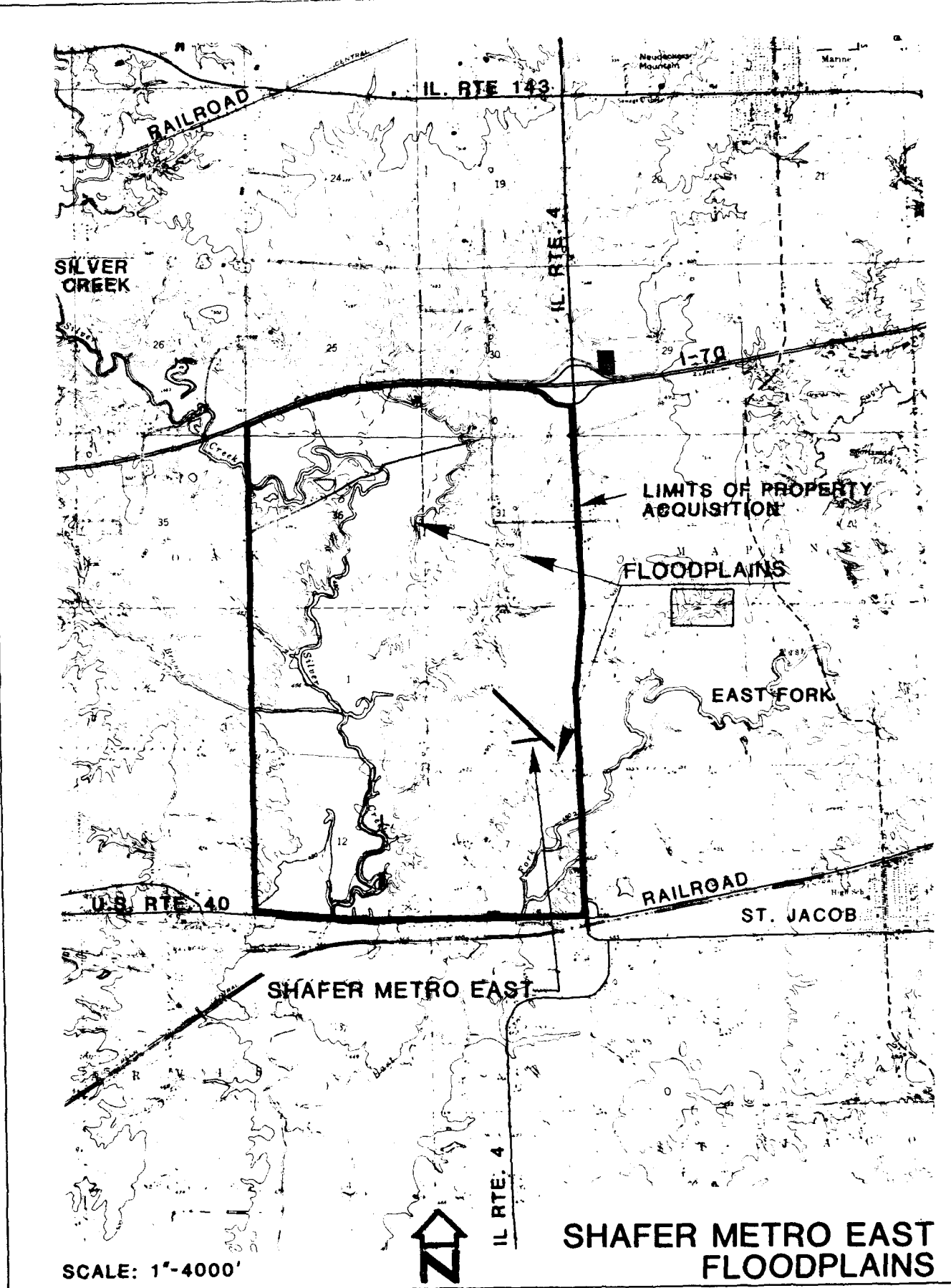
The minimum limit of property acquisition (3900 acres \pm) will affect approximately 700 acres of Silver Creek wetlands, as well as approximately 250 acres of the East Fork of Silver Creek wetlands. These wetland areas are depicted on Exhibit 3.6-4. For a general overview of the functions of wetlands, see the wetlands discussion in Section 3.1.4.

Floodplains

The minimum limit of property acquisition (3900 acres \pm) to satisfy study needs, will impact approximately 1,600 acres of Silver Creek floodplains, as well as approximately 400 acres of the East Fork of Silver Creek floodplains (see Exhibit 3.6-5).



SHAFER METRO EAST WETLANDS



Access (See Exhibit 3.6-2)

Shafer-Metro East is located in Madison County approximately 2 miles northwest of St. Jacob and approximately 35 miles northeast of downtown St. Louis. The airport site is accessible via IL Route 4 which runs north/south along the site's eastern edge.

The proposed 3,900 acre site will run north/south adjacent to IL Route 4 between Interstate 70 to the north and U.S. Route 40 to the south and will be approximately 10,000 feet wide. Rail access could be provided by way of the Conrail Railroad along the site's south edge. Based upon these facts and those discussed earlier in the compatible land use section, access to this alternate site appears to be fair. Although the land adjacent to IL Route 4 may be able to support the development of such a project, limitations do exist. Expanding to a four lane highway may require the relocation/abandonment of several rural roads, most notably Lower Marine Road, Triad Road and Hunter School Road.

Socio-Economic Impacts

The socio-economic impacts of the proposed project should be approximately the same regardless of which alternative is ultimately selected. However, the economic growth related to airport development may occur more rapidly if the alternative selected is located near an established population center and workforce rather than a rural location.

The area is basically rural in character. The expansion of the existing airport would accelerate industrial and residential growth in the area. As traffic grows, the need for ground services will expand, leading to car rental facilities, overnight lodging, restaurants, etc. Undoubtedly, there will be people desirous of maintaining the current rural atmosphere who will react adversely to these changes. However, the changes will occur gradually over time. Because of the proximity to a major metropolitan area, such changes will probably occur eventually in any case. The addition of an airport will affect the timing, and, to some extent, the character of the changes.

The Shafer-Metro East Airport expansion site is located in Madison County, Illinois which will have an estimated population of 247,600 in 1990. Below are some general socio-economic estimates (1990) for Madison County. The per capita income will be \$6456.70 (1972 constant dollars). The major non-agricultural areas of employment will be manufacturing 27.1%, services 21.8%, and the trades 20.5%. It is projected that Madison County will have an annual average unemployment rate of 8.9%.

The occupational distribution (1980) for Madison County indicates the following workforce breakdown: white collar 48.9%, service 13.7%, and blue collar 37.4%, (6). For a general discussion of the economic impacts of an airport development and its ancillary development see the Socio-Economic Impacts section under the Scott AFB alternative (see Section 3.1.4).

Social Impacts

The social impacts on the residents living within or near the Shafer-Metro East Airport would stem primarily from the displacement of rural residences, the conversion of agricultural land, and increased aircraft activity and coincident noise levels in the vicinity of the airport.

No established communities would require relocation to expand the airport. Approximately 37 rural homes would be displaced and one school would require relocation. All relocations would be conducted in accordance with the Uniform Relocation and Assistance and Real Property Acquisition Policies Act of 1970. From the information available, it does not appear that any churches, parks, or recreational facilities would be require relocation. Area traffic patterns would not be significantly altered and no major interstate highways or primary roads would require relocation. IL Route 4 which joins Interstate 70 to the north of the Shafer-Metro East site provides access to the site and may require expansion to four lanes to accommodate the additional traffic load.

The Shafer-Metro East site (3900 acres) and the surrounding area is primarily agricultural land. Approximately 1874 acres would be removed from production. Development of commercial establishments coincident to the expansion of the airport would

remove additional acreage from production in the immediate area. A portion of the Shafer-Metro East site could be returned to production upon completion of the construction phase of the project.

Approximately 50 homes would be located between the 65-75 Ldn areas. Implementation of a coordinated noise abatement program would be required to minimize the impact of airport activity noise. This could include noise barriers and or sound proofing for homes located in the higher Ldn noise level areas.

Regular national airline and air freight service in the Madison County area as well as the resultant economic growth from the development of associated businesses would have a positive impact on the local residents. The social impact of the expansion of the Shafer-Metro East Airport would depend on the acceptance of the project by the local community and a strong commitment to involve the public in the planning process.

FOOTNOTES

- (1) Source: USDOT/FAA Airport Master Record for Shafer Metro East Airport, September 26, 1986, page.
- (2) All reports provided by Julia Hertenstein (Cultural Resources Assistant) of the Illinois Historic Preservation Agency - Division of Preservation Services.
- (3) Interim Report on the Inventory of Historic Landmarks in Madison County, prepared by the Illinois Historic Landmarks Survey - Illinois Department of Conservation, May 1974.
- (4) Interim Report on the Inventory of Architecture Before WW II in Madison County (except Granite City), prepared by the Illinois Historic Structures Survey - Illinois Department of Conservation October 1973.
- (5) Dr. John Walthall, Chief Archaeologist - Illinois Department of Transportation, Bureau of Location and Environment.
- (6) Southwestern Illinois Metropolitan & Regional Planning Commission (Data Resources, Inc.).

3.7 Do Nothing

3.7.1 Institutional Issues

No public sponsorship or funding would be required.

3.7.2 Technical Issues

Airspace/Obstructions

As demand increases, airspace near existing airports will become increasingly congested.

Airport Development Requirements

Airport development requirements will not be met.

Capacity

The air carrier capacity would remain at current levels for the St. Louis Metropolitan area, which could become burdensome in the future.

3.7.3 Economic Issues

Cost of Construction

There are no construction costs associated with this alternative. As time passes, costs associated with delays, affecting both airlines and passengers, will become increasingly burdensome.

Environmental Issues

Land Acquisition

There are no land acquisition requirements and thus no impacts.

Noise

Noise impacts related to this alternative are limited to increases at existing facilities.

Compatible Land Use

The areas of incompatible uses near existing facilities, particularly Lambert-St. Louis International Airport, will be greater with this alternative.

Historical and Archeological Locations

This alternative would have no significant impacts on historical or archeological resources.

Department of Transportation Act, Section 4(f)

This alternative would have no significant impacts on Section 4(f) lands.

Endangered Species

This alternative would have no significant impact on endangered animal and plant species.

Biotic Communities

This alternative would have no significant impacts on any biotic communities.

Farmlands

This alternative would have no significant impacts on prime or unique farmlands.

Wetlands

This alternative would have no significant impacts on wetlands.

Floodplains

The selection of this alternative would result in the loss of the opportunity to improve flooding along Silver Creek in St. Clair County. The Scott Air Force Base alternative addresses aiding the existing Soil Conservation Service's program and retaining stormwater on Scott AFB to reduce peak flows. Flooding problems at other alternative locations could also possibly be mitigated.

Access

By selecting this alternative possible road improvement opportunities which would benefit the entire community would be lost.

Socio-Economic Impacts

The selection of this alternative would result in the loss of the employment opportunities coincident to the proposed airport development and associated economic growth. For a general discussion of the economic impacts of airport development, see Socio-Economic Impacts in Section 3.1.4.

Social Impacts

The selection of this alternative would result in the continued burden on the people of East St. Louis and Madison and St. Clair Counties who lack nearby national airline and air freight service.

Summary

Should the Scott alternative be selected for further evaluation, the "no-action" alternative will receive more detailed and specific analysis.

4.0 SUMMARY COMPARISON MATRIX

The seven alternatives evaluated in this phase have been rated according to the basic considerations associated with the project which are summarized as follows:

1. Enhance capacity to meet current and forecasted demand.
2. Minimize potential obstructions, airspace and air traffic use conflicts.
3. Permit time phasing of the development consistent with the current and forecast demand occurrence and offer additional potential beyond forecast period.
4. Minimize development and land acquisition costs.
5. Keep potential adverse environmental impacts to a minimum.

The seven alternatives were reviewed in light of the five basic considerations outlined above. Detailed discussions of each alternative are presented in Section 3. Based upon a review of the detailed discussions of each alternative, subjective ratings were developed and are presented in Table 4-1. The individual environmental impacts that comprise the overall environmental impact for each alternative are also presented in Table 4-1. A detailed discussion of each environmental impact concern is

ALTERNATIVE COMPARISON MATRIX SCOTT AIR FORCE BASE JOINT USE MASTER PLAN		AIRPORT/SITE	SCOTT AFB	NEW AIRPORT	St. LOUIS REGIONAL	St. LOUIS DOWNTOWN-PARKS	HIGHLAND-WINET	SHAHER METRO-EAST	DO NOTHING
RATED ITEM									
Capacity Enhancement			S	G	P	P	G	G	P
Airspace/Obstructions			G	G	G	P	G	G	N/A
Development Requirements/Potential			S	S	P	P	G	G	P
Construction Costs/Cash Flow			S	P	G	P	G	G	N/A
Overall Environmental Impact (Adverse)			M	L	H	H	L	L	N/A
Noise			H	L	H	H	L	L	S
Compatible Land Use			L	L	H	H	L	L	N/A
Historical and Archeological Sites			L	L	L	L	L	L	N/A
Section 4(f) Lands			L	L	H	L	L	L	N/A
Endangered Species			L	L	L	L	L	L	N/A
Biotic Communities			M	L	M	L	L	M	N/A
Farm Lands			M	H	M	L	L	L	N/A
Wetlands			H	M	M	M	L	H	N/A
Floodplains			H	L	L	M	L	L	N/A
Access/Location			(H)	(M)	(L)	(M)	(L)	(L)	N/A
Socio-Economic			(H)	(H)	(M)	(M)	(L)	(L)	(L)
Sociological			M	L	H	H	L	L	N/A
Land Acquisition			M	H	H	H	L	L	N/A
COMPOSITE RATING			S	G	G	P	P	P	P
<p>For Alternative Comparisons P - Poor. G - Good. S - Superior</p> <p>For Environmental Impact Concerns L - Low Impact M - Medium Impact H - High Impact () - Positive Impact</p>									

Table 4-1

TAMS
4/87

discussed in Section 3 of this report for each of the seven alternatives.

For purposes of the review, each of the basic considerations were considered of equal importance. It must be emphasized that several of the basic considerations are critical, regardless of this subjective rating, insofar as the ultimate feasibility of the project is concerned. For example, if an alternative results in an airport location and runway configuration considered not feasible by the FAA due to airspace or obstruction conflicts, the alternative must be rejected. Of significance is the capability of the alternative to pass the tests of environmental acceptability.

Based upon the results presented in Table 4-1, the Scott Air Force Base alternative received the "superior" rating. The New Columbia-Waterloo Airport and St. Louis Regional Airport alternatives follow with a "good" rating. St. Louis Downtown-Parks, Highland-Winet and Shafer-Metro East all received "poor" ratings.

5.0 CONCLUSION

Aircraft operations, passenger enplanements, air freight and general aviation operations continue to grow at Lambert-St. Louis International Airport (Lambert-St. Louis) and are forecast to continue to grow despite the fact that the airport is subject to severe congestion at certain periods of the day and under certain weather conditions.

While flights remain relatively constant during the week there is a seasonal variation between winter and summer.

The origins and destinations of flights remain relatively constant. Traffic growth is between existing origins and destinations rather than among a significant number of new market entries.

The consolidation of TWA and Ozark has resulted in some consolidation and some changes in equipment, but it has not provided a significant increase in airport capacity.

Fleet size has changed. Large wide-body aircraft are decreasing in numbers and small commuter aircraft are increasing in size. Capacity relief on the airside will be minimally achieved through a slight increase of commercial jet aircraft.

Air freight has grown but "all-cargo" volumes have not materially increased.

Automobile parts contribute a major portion of air freight. With the expanding markets in the mid-west and sourcing of parts from Japan and Korea it would appear that lack of facilities at Lambert-St. Louis will divert potential "all-cargo" shipments to other localities.

The package carrier industry continues to grow at a rapid pace. A great majority of "hubbing" for package carriers occurs in the midwestern states. Facilities for a hubbing operation at Lambert-St. Louis do not exist and space is limited for an efficient operation of this type.

Economic growth of a region is tied directly into the region's ability to provide good inter-region transportation facilities. Failure to provide additional air service will result in a slow down of economic growth with attendant dislocation of people and businesses. On the other hand, by providing new transportation facilities, particularly at a new geographic location, opportunities for expansion will occur. (The most recent example of rapid economic growth is that which is currently occurring at Dulles Airport in the Washington CMA. The Dulles corridor has become the predominant growth area in the region).

While the technical aspects of the selection of alternatives can be resolved, some of the alternatives are less attractive than others. The St. Louis Downtown-Parks Airport is located in a dense residential area and surrounded by infra-structure such as power lines, railroads and flood control facilities. The expanded area required for a commercial runway would require the relocation of the newly constructed I-250. The use of St. Louis Regional Airport will require extensive off-airport access construction and the site is not centrally located to serve the 5 county area.

Columbia-Waterloo, previously recommended as the best location for a new commercial airport also would require extensive future highway access development and is on the periphery of the demand area. From an institutional standpoint Columbia-Waterloo has previously been rejected.

Scott Air Force Base (Scott AFB) will require that the U.S. Air Force concur in its use and that the military mission is not derogated. Preliminary actions to obtain agreement have resulted in a positive approach to the suggestion; however, no commitment can be obtained until further assessments are made, including the approval of an Environmental Impact Statement.

For the other locations, it will be necessary to obtain local public sponsorship for the airport. Chapter 11 of the feasibility study discusses this subject in detail outlining the variety of

organizational and jurisdictional arrangements used for public airports.

From an environmental standpoint each of the sites have environmental concerns and have been described in Section 3 of this report. Special focus has been placed on aircraft noise, conversion of wetlands and the taking of farmland. From the rating system employed in Section 4 it is evident that each site has its limitations and each has its own benefits. Only a qualitative analysis can be made with any degree of accuracy. Weighing and numerically measuring the value of socio-economic benefits against wetland conversion is based almost entirely on the qualitative judgement of the rating team.

The issue of noise is a predominant element. St. Louis Downtown-Parks, St. Louis Regional, and Scott AFB are located near residential areas. Although aircraft are getting quieter and with the next generation of aircraft engines will be even less noisy, the fact remains that noise mitigation will be required for an appreciable number of households at each of the locations.

There are wetlands throughout the 5 county area. Mitigation measures are available to counteract any downstream damage, and costs for this mitigation are included in the cost comparisons for each locality.

The amount of farmland to be converted to airport use varies with locality. Depending on the location and ultimate layout of runways and support facilities, some of this land may be returned to productive use. Farmland is also considered to be very compatible adjacent to airports and land use planning in the airport environs should take this into consideration.

The socio-economic benefits of airport development appear to out-weigh the unmitigatable adverse environmental impacts. The 5 county region is in need of additional diversification from the principal farming industry. Employment and the net additional income which will be brought by air operations, related manufacturing and secondary benefits are important to the area. As an example, part-time employment of military personnel and college students is beneficial to all concerned. Much of the air activity peaks at particular times of the day, and operational efficiency is achieved by the use of such labor. The socio-economic benefits, as they relate to Scott AFB, are detailed in Section 3 of this study. While such benefits also exist at other locations, it is doubtful that demand for air service will develop to the same level at the alternative locations. The fact that the base will continue to be the focus of air service for a considerable period of time and that such service may be instituted at an earlier date adds to the value of the selection of this alternative to meet future air service demand.

It is anticipated that land values in the vicinity of any selected airport location will increase, thereby raising taxes at current rates. However, other revenue generated by the change in land usage will tend to offset a need for additional public funding and in some cases reduce public funding. An example of such a trade-off would be the reduction in welfare benefits to those who obtained jobs.

Scott AFB has the added advantage of providing capacity under adverse weather conditions by the simultaneous use of the existing military runway and the new civil runway. It also offers the advantage to both civil and military operations of having two runways.

It should be noted that while construction costs at each location investigated are comparable, the Scott AFB alternative results in a two runway configuration rather than a single runway airport. If the cost of a second runway were included at any of the other sites, the Scott AFB alternative would be the most cost-effective alternative.

A new airport, located at a new site and connected directly to the Interstate Highway System within the 5 county region, could be planned in such a way that it would be comparable to the Scott AFB installation. In view of the fact that previous efforts to establish such a facility were not acceptable, and because the

infrastructure at Scott AFB is already in operation, the new airport alternative, while attractive in many respects, does not meet the critical test of practicality. It is therefore excluded from final consideration.

In conclusion, it is recommended that Scott AFB is the best alternative solution for providing direct air service to and from the 5 county region forming the Illinois portion of the St. Louis CMA.

Scott AFB meets the following criteria as well or better than any of the other alternatives:

- It is near the center of demand for air service, generating a considerable portion of the demand.
- It appears that satisfactory joint-use and security agreements can be developed.
- Civil air carrier operations are compatible with the military mission and may even enhance this mission.
- Based on previous discussions it appears there are no airspace problems that cannot be resolved.
- It is readily accessible to the labor market for the training and employment of airport and air carrier personnel.

- The development costs are not excessive and maintenance costs are shared with the military.
- The majority of adverse environmental concerns can be mitigated.
- Ground transportation access is excellent.

APPENDIX A

APPENDIX A
COMMERCIAL AIR TRAFFIC OPERATIONS
LAMBERT-ST. LOUIS INTERNATIONAL AIRPORT

	Page No.
1.0 INTRODUCTION	A-1
1.1 Study Objective	A-1
1.2 Regional Overview	A-1
2.0 LAMBERT-ST. LOUIS HUB PATTERN	A-3
2.1 Airline Hubs	A-3
2.1.1 Hub-and-Spoke System	A-4
2.1.2 Common Hub Characteristics	A-4
2.1.3 Regional Impact of Airline Hubs	A-6
2.2 Air Traffic Hubs	A-8
2.2.1 Lambert-St. Louis - Hub Profile	A-9
2.2.2 Congestion at Lambert-St. Louis	A-10
3.0 AIR TRAFFIC PATTERNS AT LAMBERT-ST. LOUIS	A-12
3.1 Location	A-12
3.2 Commercial Air Carrier Operations	A-12
3.2.1 Daily Scheduled Operations: March, 1986	A-13
3.2.2 Daily Scheduled Operations: December, 1986	A-13
3.2.3 Daily Scheduled Operations: March, 1987	A-14
3.2.4 Origin-Destination/Fleet Mix	A-14
3.3 Current Commercial Service	A-15
3.4 Current Cargo Service	A-16
4.0 FLIGHT SERVICE FORECAST	A-18
4.1 Air Carrier Operations	A-19
4.2 Commuter Operations	A-21
4.3 Cargo Operations	A-22
4.3.1 Industrial Cargo	A-23
4.3.2 Small Package Express	A-24
4.3.3 Cargo Operation Trends	A-24
4.4 Regional Economic Impact on Flight Service Trends	A-25
4.5 Fleet Mix Forecast	A-26
5.0 SUMMARY	A-29

1.0 INTRODUCTION

1.1 Study Objective

The purpose of this study is to profile Lambert-St. Louis International Airport (Lambert-St. Louis) as it currently serves the large St. Louis hub area. A large hub is defined by the FAA as a metropolitan area which enplanes over 1% of the total annual U.S. enplaned passengers. An examination of the most recent available data focuses on the demand/capacity relationship at Lambert-St. Louis and its implications for future growth in airline service and economic expansion in the surrounding region.

1.2 Regional Overview

Lambert-St. Louis, located 10 miles northwest of St. Louis, serves a nine county Consolidated Metropolitan Statistical Area (CMSA) of 2.4 million. It is the sole commercial air carrier airport in a region that has become a major passenger and cargo air transportation center. In spite of extensive construction programs, the rapid air traffic growth at Lambert over the past 10 years has created growing congestion. Airline activity has begun to outpace capacity with present total aircraft operations already exceeding 1988 forecasts, (1). [Numbers () indicate footnotes and are found at the end of the study. Other sources not quoted directly will be found in the bibliography following the appendix.] Lacking both capacity at Lambert-St. Louis to handle

the increasing demand and supplemental facilities in the hub area to accommodate the overflow, aviation activity will experience inconvenience and delays to the point that normal regional growth will not be achieved. In January, 1987, the Department of Transportation included Lambert-St. Louis among 12 of the nation's busiest airports targeted for investigation and discussions aimed at reducing delay, (2). A recent FAA report states, "Furthermore, congestion will increase at airports that are already quite severe, such as St. Louis, Chicago, Atlanta, Denver, and Boston. Unless action is taken to expand capacity at these airports, delays may reach levels that will be intolerable to airport users" (pp. 2-18), (3). Clearly, additional airport capacity will be necessary to enable the St. Louis and Southern Illinois area to realize its full economic potential.

2.0 LAMBERT-ST. LOUIS HUB PATTERN

2.1 Airline Hubs

The post-1978 period, following the deregulation of the airline industry, witnessed a fundamental shift in air service patterns. The most significant consequence has been the change in airline route structures, operational frequency and service patterns that have accompanied the hubbing strategy of major airlines. The economics of the system has proved so compelling that U.S. carriers now operate 49 hubs at 31 airports, (4).

Hubbing is a process by which airlines operate in and out of selected airports in banks of arrivals and departures, allowing passengers to move conveniently and with minimal delay between connecting flights scheduled by the same carrier. The key to a hubbing operation is collecting large volumes of passengers from many diverse points and funneling them through a hub airport, enabling them to transfer to connecting flights.

The use of the word "hub" in this context is different than the use of the word "hub" in describing the relative size of air traffic generators. The latter use of the word relates to the geographic area served by 1 or more airports where passengers are enplaned and deplaned.

2.1.1 Hub-and-Spoke System

By channeling passengers through an intermediate central hub, an airline can combine passengers with different origins and destinations, increasing both the number of city-pairs served and the average number of passengers per flight while reducing average costs, (5). Aircraft converge on a hub airport along spokes from various points, passengers disembark and race to connecting flights operated by the same airline, and the aircraft take off again, usually less than an hour later. This hub-and-spoke configuration makes frequent, low-cost service possible between cities and provides tremendous leverage for the airline. By routing 25 flights through a connecting hub, 625 city pairs are served, (6).

With the freedom allowed by deregulation to enter and leave markets, and with the widespread adoption of a hub-and-spoke system, the best guarantee of good airline service has been to become the site of a major airline hub.

2.1.2 Common Hub Characteristics

Although different carriers choose their hubs for a variety of reasons, there are a number of common characteristics which the airline hubs share. A 1986 FAA study on airline hubbing in the U.S. cites the following as critical determinants, (7):

- Strong Population Source - There should be a sizable population nearby, since an airline seeks to have the maximum intraline feed potential. Sites which offer existing business and commercial opportunities, large industry, convention and vacation facilities are desirable. However, a successful hub does not always require a large regional population base. In 1985, for example, Charlotte, N.C. enplaned 1.23% of U.S. total enplanements with only .4% of the population base, (8).
- Geographic Location - Airlines desire to minimize the amount of circuitry along their routes. Terrain features, such as mountains, and weather patterns are also considerations.
- Airport Facilities - Terminal area, gate and runway space are important considerations. The airport must also have room to expand if the air carrier needs to grow.
- Strong Economy and Balanced Workforce - Not much traffic will be generated in a depressed area with high unemployment, nor would there be much incoming traffic.
- Existing Competition - Competing airline operations should be at a minimum, or at least "acceptable", level. For example, People Express moved into infrequently used Newark and built it into a very successful hub.

- Fleet Composition - Hub sites should accommodate the type of aircraft which the airline is flying.
- Avoidance of Existing Major Hubs - Sometimes a hub is formed on the idea that passengers will bypass an overcrowded major hub in favor of a nearby less dense one. Charlotte, for example, was developed as an alternative to Atlanta.
- Establishment of a "Niche" - In parts of the country where no airline is dominant, an up-and-coming airline may use this area as a place to get started and establish itself.

2.1.3 Regional Impact of Airline Hubs

There are both beneficial and detrimental considerations to be weighed in evaluating the effects of an airline hub on the surrounding area.

Once forgotten airports and the accompanying small cities are being put back on the map with hub-and-spoke service. Large hub airports provide enormous economic benefit to an area. This means increased revenues for restaurants, hotels and various travel-related businesses. Cash flows increase, as well as local employment levels. Salaries earned directly by airport employees are circulated through the regional economy as local income. Improved access encourages the establishment of new industry.

However, there are drawbacks to the hub system also, if it leads to unmanageable congestion which produces delays. Where more than one airline hubs at a particular airport, things may bog down. Each airline tends to operate their flights at peak hours early and late in each business day when most passengers want to travel, and this may lead to a great deal of crowding. Even when jets leave their gates on time, controllers may still have them waiting in line for take-off. That affects scheduling all down the line in a domino effect that can result in significant delays. Each day, an estimated 1,132 of the 16,000 domestic U.S. flights leave or arrive 15 or more minutes behind schedule, (9).

The concentration of flights at the hubs presents airline and airport management with problems related to efficient use of their resources. During peak hours in the day, equipment, gates, employees and capacity may be over-utilized. During off-peak hours, these resources may be under-utilized.

With more passengers flying in and out of a particular airport, surface traffic congestion and aircraft noise become increasingly difficult problems. Airspace congestion, during peak operations, may produce gridlock conditions in the airspace around the terminal area and consequent pressures on air controllers, (10).

LAMBERT/ST. LOUIS INTERNATIONAL AIRPORT

HUB AREA AIRPORT ACTIVITY COMPARISON

HUB*	POPULATION	COMMERCIAL AIRPORTS	AIR CARRIER OPERATIONS (000)	ENPLANED PASSENGERS (000)	ENPLANED CARGO (TONS)		
			1981 : 1983 : 1985	1981 : 1983 : 1985	1981 : 1983 : 1985		
DALLAS/FT. WORTH	3,511,600	DFW REGIONAL LOVE FIELD MEACHAM	346 71 404	11441 12738 2944	17715 3221	84448 78604 92300	
		TOTAL:	821	792	20991	84449 78821 92306	
NEW YORK	17,931,100	KENNEDY LAGUARDIA NEWARK	155 215 124	8223 8464 4531	9795 9614 8300	347561 254060 199748	
		TOTAL:	494	706	33939	30896 42961 64730	
CHICAGO	6,176,900	O'HARE MIDWAY MEIGS	491 22 0	16380 18197 736	21510 1238	302085 291350	
		TOTAL:	513	645	22752	305235 291413	
ATLANTA	2,471,700	HARTSFIELD	514	18703	18648	162932 156835 167248	
LOS ANGELES	12,738,200	LONG BEACH LOS ANGELES INTERNATIONAL HOLLYWOOD/BURBANK ORANGE COUNTY ONTARIO	2 359 30 41 42	10 278 41 30 37	56 13595 941 1389 1176	399 14266 1449 1584 1124	542 15957 293940 272833 2044
		TOTAL:	474	483	18545	21303 299713 278593	232237
SAN FRANCISCO	5,809,300	SAN FRANCISCO INTERNATIONAL OAKLAND METRO SAN JOSE	217 31 52	8733 892 1371	10270 1381 1714	10948 2008 2300	167117 171166 168306
		TOTAL:	300	385	13365	15256 3790 4221	181640 180613
WASHINGTON	5,742,000	NATIONAL DULLES BWI	200 27 65	190 38 83	6324 6560 1326	6729 2286 2297	11609 9583 10016
		TOTAL:	292	378	10183	12424 32776 36629	41216
DENVER	1,827,100	STAPLETON	322	355	10437	11401	13863 65605 61939
ST. LOUIS	2,412,400	LAMBERT	187	249	5126	7815	9614 18479 33472
MIAMI	2,878,800	MIAMI INTERNATIONAL FT. LAUDERDALE/HOLLYWOOD	190 81	162 64	7324 2694	7717 2951	110993 10911
		TOTAL:	271	226	10018	9943	10668 121904 88344
MINNEAPOLIS/ST. PAUL	2,262,400	MINNEAPOLIS/ST. PAUL	154	173	4524	5782	7250 45530 46384
BOSTON	4,051,100	LOGAN	172	180	6623	8045	9113 90605 104493
							85495

TAMS
3/25/87

Appendix A
Exhibit 2-A

LAMBERT/ST. LOUIS INTERNATIONAL AIRPORT

1985 Hub Area Rankings

RANK	BY POPULATION:		BY NO. OF AIR CARRIER OPERATIONS:		BY NO. OF ENPLANEMENTS:		ENPLANEMENTS PER CAPITA (E/C):	
	HUB	(000)	HUB	(000)	HUB	(000)	HUB	E/C
1	NEW YORK *	17,931	DALLAS/FT. WORTH	792	NEW YORK 1	33,939	ATLANTA	8.36
2	LOS ANGELES *	12,738	NEW YORK 1	706	CHICAGO	22,752	DENVER	7.59
3	CHICAGO *	6,177	CHICAGO	645	LOS ANGELES 2	21,303	DALLAS/FT. WORTH	5.97
4	SAN FRANCISCO *	5,809	ATLANTA	568	DALLAS/FT. WORTH	20,999	ST. LOUIS	3.99
5	WASHINGTON *	5,742	LOS ANGELES 2	483	ATLANTA	20,678	MIAMI	3.71
6	BOSTON	4,051	SAN FRANCISCO 3	385	SAN FRANCISCO 3	15,256	CHICAGO	3.68
7	DALLAS/FT. WORTH *	3,512	WASHINGTON 4	378	DENVER	13,863	MINNEAPOLIS/ST. PAUL	3.21
8	MIAMI *	2,879	DENVER	355	WASHINGTON 4	12,424	SAN FRANCISCO 3	2.63
9	ATLANTA	2,472	ST. LOUIS	292	MIAMI	10,668	BOSTON	2.25
10	ST. LOUIS	2,412	MIAMI	226	ST. LOUIS	9,614	WASHINGTON 4	2.16
11	MINNEAPOLIS/ST. PAUL	2,262	MINNEAPOLIS/ST. PAUL	224	BOSTON	9,113	NEWYORK 1	1.89
12	DENVER	1,827	BOSTON	203	MINNEAPOLIS/ST. PAUL	7,250	LOS ANGELES 2	1.67
V	CHARLOTTE	1,049	CHARLOTTE	177	CHARLOTTE	5,103	CHARLOTTE	4.86

1 KENNEDY, NEWARK, LA GUARDIA 2 LOS ANGELES INT'L, LONG BEACH, HOLLYWOOD/BURBANK. ORANGE COUNTY, ONTARIO
3 SAN FRANCISCO INT'L, OAKLAND, SAN JOSE 3 NATIONAL, DULLES, BWI

* HUBS WITH MORE THAN ONE COMMERCIAL AIR CARRIER AIRPORT

SOURCES: DEPARTMENT OF TRANSPORTATION AIRPORT ACTIVITY TABLE, 1985
U.S. CENSUS BUREAU, 1985 STATISTICS

Appendix A
Exhibit 2-B

TAMS
3/25/87

2.2 Air Traffic Hubs

As previously stated, the FAA does not define hubs as specific airports, but as the cities and Metropolitan Statistical Areas using aviation services. They may require more than one airport. Communities are divided into four classes determined by each community's percentage of the total enplaned passengers by scheduled air carriers in the U.S. Large hubs have 1.00% of such traffic (3,633,415 passengers and over in 1985). In 1985, there were 27 large hub airports which accounted for 67.3% of all enplaned passengers, (11).

Exhibit 2-A lists the top twelve U.S. hubs in descending order of 1985 air carrier operation volume. In order to reflect actual community use, this exhibit considers all commercial air carrier airports within a 50-mile radius of the hub city in the over-all total figures for that hub, even if the FAA designates those airports as part of a separate, medium-sized hub. Therefore, the Washington figures include Baltimore/Washington International (BWI), and the San Francisco figures include San Jose Airport. The population figures correspond to the statistical areas served by the listed airports. The twelve hub areas include all commercial airports listing current operations of the Official Airline Guide as of March, 1987. Only five of those hubs are served by a single commercial airport: Atlanta, Denver, St. Louis, Minneapolis/St. Paul and Boston.

Exhibit 2-B ranks the twelve hub areas according to the descending order of: population, volume of air-carrier operations, volume of total enplanements, and enplanements per capita. (The rank of the Charlotte Airport is included as a reference point in the enplanements per capita figures.) Relative to the other hub areas under consideration, St. Louis ranks tenth in population, ninth in 1985 volume of air-carrier operations, tenth in volume of 1985 enplanements, and fourth in number of enplanements per capita. Of the three hub areas with greater enplanements per capita, two--Atlanta and Denver--are served by a sole commercial airport, both of which have experienced severe congestion, (12). As a result, Atlanta and Denver are planning/proceeding with plans for adding air carrier airports to serve their long-term needs.

2.2.1 Lambert-St. Louis Hub Profile

St. Louis, with a sizable population, central geographic location and rapidly expanding air service, is a major hub. The Federal Aviation Administration maintains a Terminal Area Forecast for a large number of U.S. airports which presents historical and forecast data over a period of 19 years. The Terminal Area Forecast for Lambert-St. Louis details the remarkable growth of St. Louis as a hub. Some of the relevant statistics, examined below and listed in Exhibit 2-A, are useful in developing a profile of Lambert-St. Louis past and anticipated activity.

Total passenger enplanements, 9,614,000 in 1985, are projected to reach 17,715,000 by the year 2000. This represents an 84% increase over current enplanements. Total aircraft operations are forecasted to reach 597,000 by 2000, which is a 45% increase over 1985 total aircraft operations of 411,000. Enplaned cargo and mail, 94,290 tons in 1985, is expected to grow by 40% by the year 2000, reaching a total of 119,841 tons. During the period 1985 through 2000, passenger enplanements are expected to grow at a rate of 4.1% per year, and total aircraft operations are forecast at an annual growth rate of 3%, (13).

2.2.2 Congestion at Lambert-St. Louis

Congestion is not a problem unique to St. Louis, and Lambert-St. Louis unquestionably is affected by the same growth phenomena that busy airline hubs all over the country are experiencing. As FAA Administrator Donald Engen recently explained, U.S. airports were not filled to capacity until airlines changed their scheduling concept from city-pairs to hub-and-spoke. Excess capacity that previously resided in major airfields has been used up, and strains have been created on the system that it never had to deal with before, (14).

Lambert-St. Louis' success as an airline hub, predominantly served by TWA, has resulted in increasing pressure on airport capacity. Hubbing flights converge on its runways during

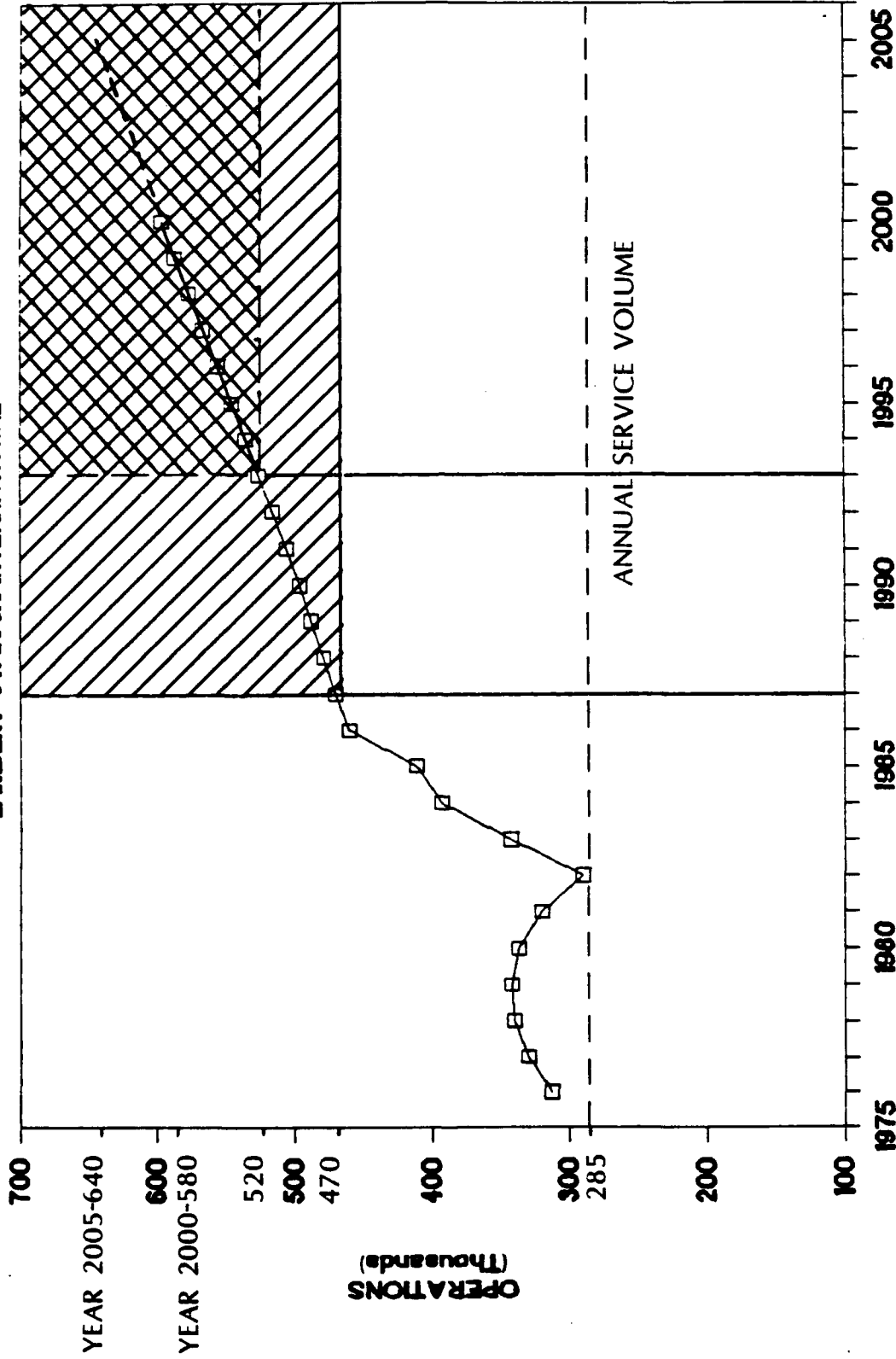
mid-morning, noon and late afternoon peak traffic periods. Just after noon every weekday, for example, 43 TWA jets are scheduled to land within a one-hour period. Within 35 minutes after the last airline reaches the gate, the same 43 planes are scheduled to start taking off, (15).

The FAA Terminal Area Forecast lists Lambert-St. Louis as being saturated in the 1985-1990 time frame. Total aircraft operation forecasts for 1990 reach 496,000 and by the year 2000, 597,000 total aircraft operations are needed to satisfy demand, (16). Exhibit 2-C plots the annual itinerant operations forecast demand through the year 2005, as well as a probable level of operations at Lambert where growth will be constrained by lack of airport capacity.

The need for additional capacity in the St. Louis area has been documented by the FAA and others. In 1984 Lambert-St. Louis' total aircraft operations ranked 7th in the United States. By 1985 they dropped to 8th. By 1990, St. Louis is expected to drop to 9th and by the year 2000 to 13th. As the FAA forecasts severe congestion will exist within the 1985 to 1990 time frame, additional airline service from potential new entrants into Lambert-St. Louis will be restricted, (17). As a result, air transportation activity and its corresponding economic benefits will be lost to the St. Louis region unless additional facilities are provided for passenger and freight traffic.

ANNUAL ITINERANT OPERATIONS 1976-2005

LAMBERT-ST. LOUIS INTERNATIONAL



YEAR
TOTAL ITINERANT OPS

□ Saturation under present system

▨ Saturation with additional 10% capacity enhancement

3.0 AIR TRAFFIC PATTERNS AT LAMBERT-ST. LOUIS

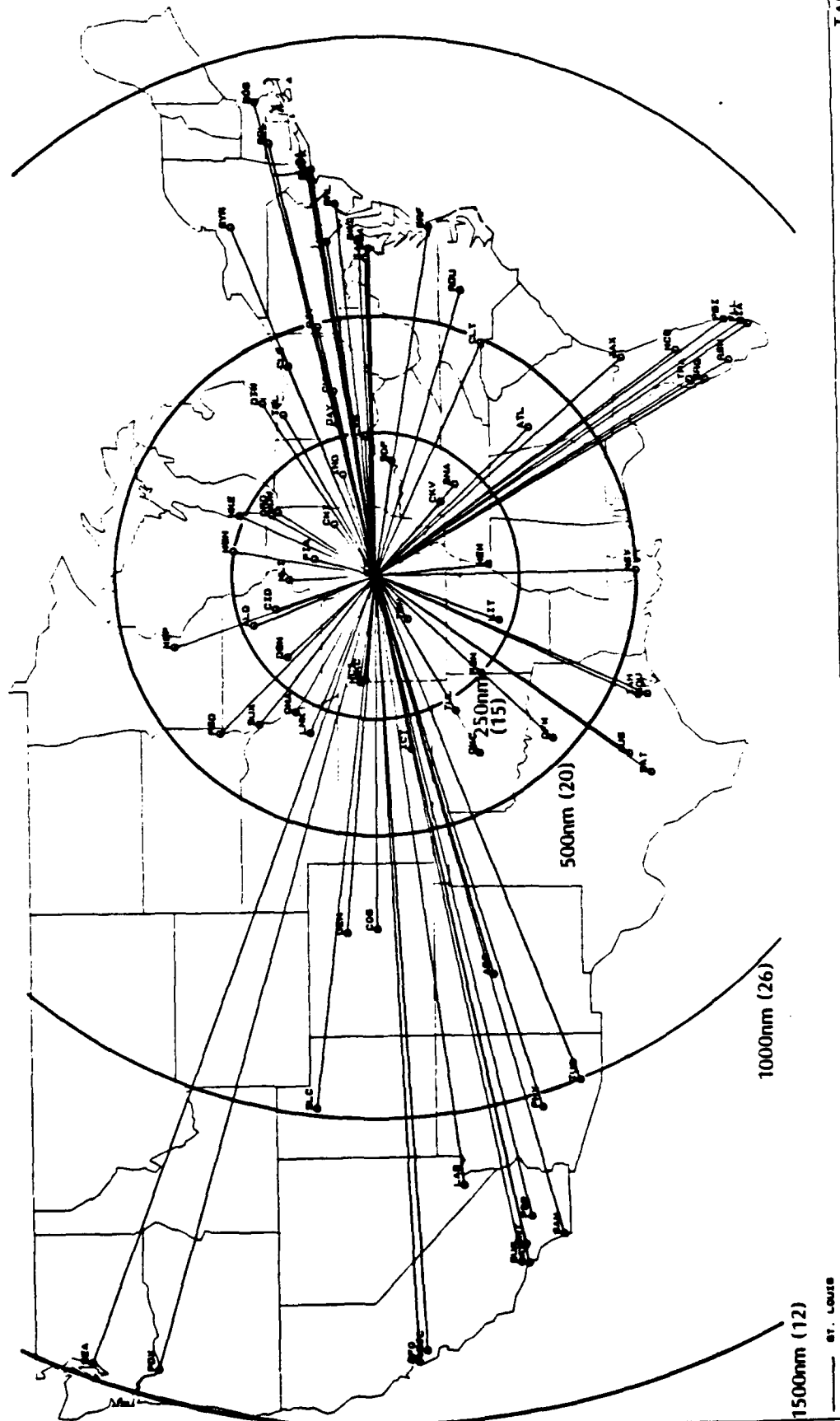
3.1 Location

Exhibits 3-A1 and 3-A2 demonstrates the geographic impact of the central location of St. Louis, and the route circuitry that it offers. 35% of the direct flights are primarily commuter operations serving cities within 250 nautical miles of St. Louis. 22% of direct flights serve destinations 250-500 nautical miles from St. Louis, 29% serve cities within 500-1,000 nautical miles, and only 14% are in the 1,000-1,500 nautical mile range.

3.2 Commercial Air Carrier Operations

Daily scheduled aircraft activity for Lambert-St. Louis, both before and after the TWA/Ozark airline consolidation, was studied by comparing daily scheduled operations during March, 1986 with daily scheduled operations during December, 1986 and March, 1987. For the sake of consistency, schedules were examined for a typical weekday (Wednesday, March 12, 1986, Wednesday, December 10, 1986 and Wednesday, March 18, 1987) in the corresponding editions of the Official Airline Guide (OAG). General aviation and military operations were not included in total figures, but have been examined separately so that independent conclusions could be drawn about their impact on daily traffic. The resulting data provided a basis for evaluating the daily, hourly and directional traffic patterns at Lambert-St. Louis. Exhibit 3-B (Rev.) graphically portrays the hourly distribution of daily aircraft movements.

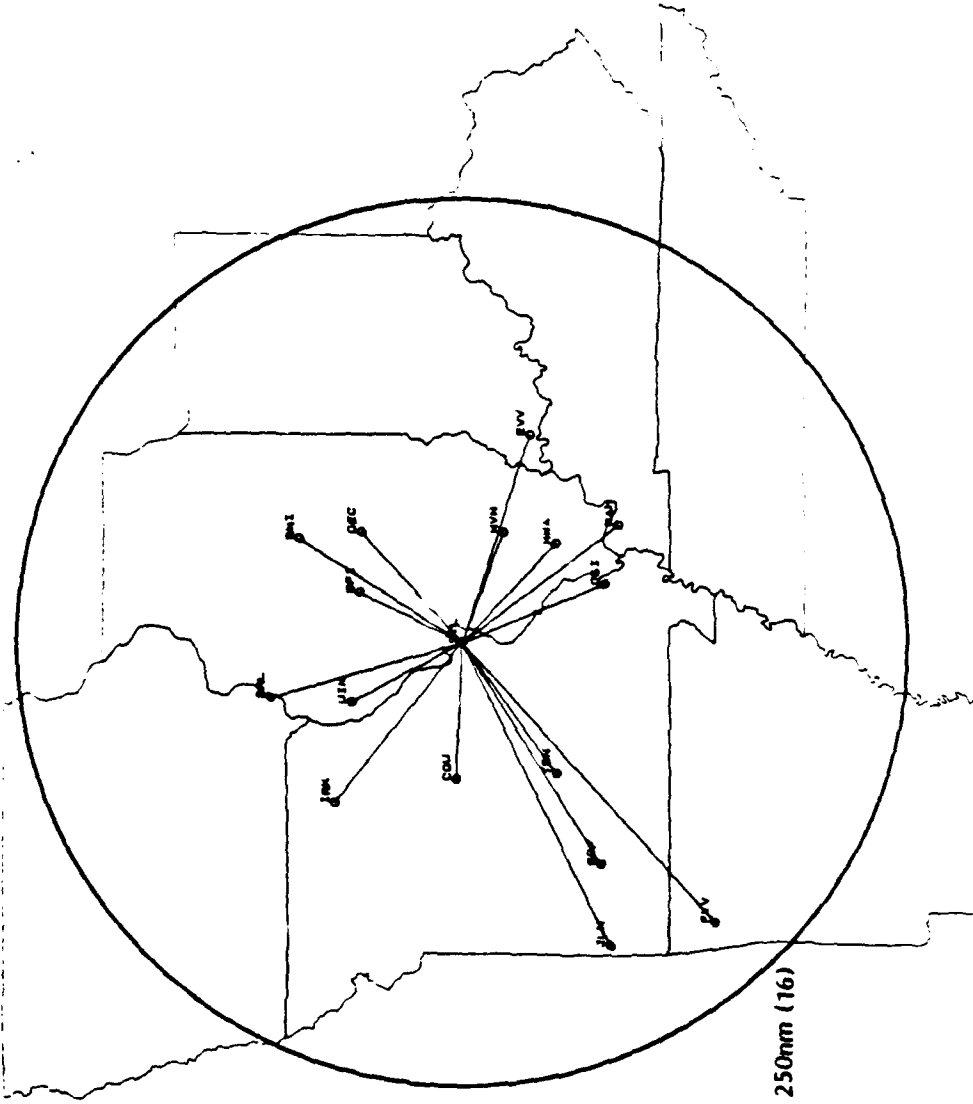
AIR CARRIER SERVICE: LAMBERT-ST. LOUIS INTERNATIONAL AIRPORT
NON-STOP SERVICE: MARCH, 1987



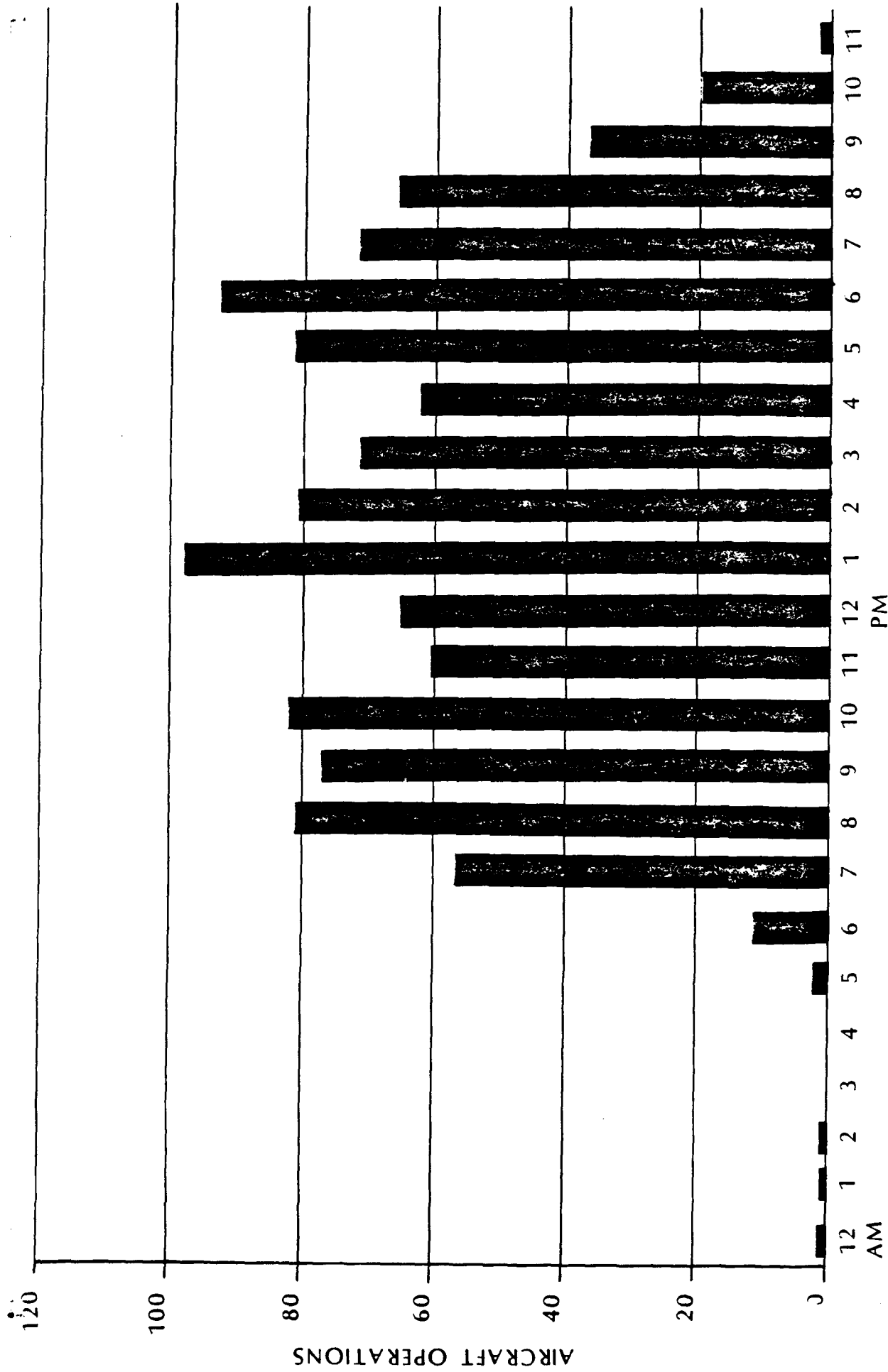
ST. LOUIS

TAMIS
4/1/87

COMPUTER AIR CARRIER SERVICE: LAMBERT-ST. LOUIS INTERNATIONAL AIRPORT
 NON-STOP SERVICE: MARCH, 1987



TAMS
 4/1/87



AVERAGE HOURLY DISTRIBUTION OF DAILY CARRIER MOVEMENTS Lambert/St. Louis International Airport

Source: Official Airlines Guide for March & December 1986 and March 1987

3.2.1 Daily Scheduled Operations: March, 1986

In March, 1986, there were 1130 daily scheduled commercial operations, 74% of which were jets (air carriers) and 26% of which were turboprops (commuters).

Peak hour occurred between 6 and 7 P.M. with 109 total arrivals and departures, 77% of which were jets and 23% of which were turboprops.

3.2.2 Daily Scheduled Operations: December, 1986

In December, there were 1153 daily scheduled commercial operations, 69% of which were jets and 31% of which were turboprops. Peak hour occurred between 1 and 2 P.M. with 106 total operations, 69% of which were jets and 31% of which were turboprop.

While it may still be too early at this date to assess the full impact of the September, 1986 TWA/Ozark consolidation, some differences may be noted between the March and December figures. While there was only a slight increase in total operations (2%), peak hour operations were redistributed. The higher number of turboprop operations in December is significant in that it reflects a shuffle of TWA's fleet mix after the TWA/Ozark consolidation.

3.2.3 Daily Scheduled Operations: March, 1987

In March, 1987 there were 1028 daily scheduled commercial operations, 76% of which were jets and 24% of which were turboprops.

Peak hour remained between 1 and 2 P.M. with 96 total operations, 76% of which were jets and 24% of which were turboprops.

The decrease in total daily operations from December, 1986 to March, 1987 is due primarily to a sizable drop in TWA commuter service. (This trend is also reflected in the lower percentage of turboprop operations, from 31% in December to 24% in March, 1987.) TWA only deleted two cities from non-stop service, but they substantially decreased the number of daily flights to cities within 250 nautical miles.

3.2.4 Origin-Destination/Fleet Mix

In March, 1986 the predominant traffic pattern by direction of origin-destination from St. Louis was to the northeast. In December, 1986, the predominant direction remained to the northeast. However, by March, 1987 the gradually declining percentage to the northeast was matched by a rising percentage to the southwest. A listing of the percentage of daily scheduled commercial flights by direction, ranked by volume of operations, is as follows:

<u>March, 1986</u>		<u>December, 1986</u>		<u>March, 1987</u>	
Northeast	24%	Northeast	23%	Northeast	22%
Southwest	20%	Southwest	19%	Southwest	22%
West	16%	West	17%	West	17%
Southeast	14%	Southeast	14%	Southeast	13%
North	8%	North	10%	North	9%
Northwest	8%	Northwest	8%	Northwest	7%
East	7%	East	6%	East	7%
South	3%	South	3%	South	3%

Exhibits 3-C, 3-D, and 3-E summarize the number and type of aircraft operations by origin-destination direction from St. Louis in March and December, 1986, and March, 1987. (See Appendix A-33 for full titles and classification of abbreviated aircraft.)

3.3 Current Commercial Service:

The above study reveals that in December, 1986 Lambert-St. Louis was served by 16 scheduled passenger carriers, with TWA accounting for the majority of arriving and departing traffic. By March, 1987 that number dropped to 15. (See Appendix A-33.) While non-stop service was available to 90 North American destinations during March, 1986, and to 91 destinations in December, there was some minor internal shifting in cities served. Daily scheduled direct service in December deleted two of the southeastern cities served in March, 1986: Greensboro, N.C. and

DAILY COMMERCIAL FLEET MIX - MARCH, 1986
NUMBER AND TYPE OF AIRCRAFT
BY ORIGIN-DESTINATION FROM ST. LOUIS

	ARRIVALS	DEPARTURES	TOTAL	NO.	%
N	2 72S 11 D9S 2 727 5 SF3 1 M80 16 SWM 1 DC9 8 BE9	2 72S 11 D9S 2 727 5 SF3 1 M80 16 SWM 1 DC9 8 BE9	4 72S 22 D9S 4 727 10 SF3 2 M80 32 SWM 2 DC9 16 BE9	92	8%
NE	4 767 7 DC9 13 73S 30 D9S 30 72S 1 D9S 15 727 14 SWM 8 M80 2 BE9 10 L10	4 767 7 DC9 13 73S 30 D9S 30 72S 1 D9S 15 727 14 SWM 8 M80 2 BE9 10 L10	8 767 14 DC9 26 73S 60 D9S 60 72S 2 D9S 30 727 28 SWM 16 M80 4 BE9 20 L10	268	24%
E	8 72S 4 DC9 6 727 7 D9S 10 M80 3 SF3	8 72S 4 DC9 6 727 7 D9S 10 M80 3 SF3	16 72S 8 DC9 12 727 14 D9S 20 M80 6 SF3	76	7%
SE	1 733 1 L10 1 73S 5 DC9 7 72S 20 D9S 4 727 24 SWM 10 M80 7 BE9	1 733 1 L10 1 73S 4 DC9 6 72S 20 D9S 4 727 24 SWM 10 M80 7 BE9	2 733 2 L10 2 73S 9 DC9 13 72S 40 D9S 8 727 48 SWM 20 M80 14 BE9	158	14%
S	1 73S 2 DC9 3 72S 9 D9S 1 727 4 SWM	1 73S 2 DC9 3 72S 9 D9S 1 727 4 SWM	2 73S 4 DC9 6 72S 18 D9S 2 727 8 SWM	40	3%
SW	4 767 4 L10 8 73S 6 DC9 18 72S 21 D9S 10 727 5 SF3 19 M80 19 SWM	4 767 4 L10 8 73S 6 DC9 18 72S 21 D9S 10 727 5 SF3 19 M80 19 SWM	8 767 8 L10 16 72S 12 DC9 36 72S 42 D9S 20 727 10 SF3 38 M80 38 SWM	228	20%
W	5 73S 13 D9S 21 72S 2 SF3 8 727 20 SWM 8 M80 4 BE9 3 L10 4 CNA	5 73S 13 D9S 21 72S 2 SF3 8 727 20 SWM 8 M80 4 BE9 3 L10 4 CNA	10 73S 26 D9S 42 72S 4 SF3 16 727 40 SWM 16 M80 8 BE9 6 L10 8 CNA	176	16%
NW	3 72S 21 D9S 8 727 1 SWM 5 M80 4 BE9 2 DC9 2 PAG	3 72S 21 D9S 8 727 1 SWM 5 M80 4 BE9 2 DC9 2 PAG	6 72S 42 D9S 16 727 2 SWM 10 M80 8 BE9 4 DC9 4 PAG	92	8%
Total:				1130	100%

DAILY COMMERCIAL FLEET MIX - DECEMBER, 1986
NUMBER AND TYPE OF AIRCRAFT
BY ORIGIN-DESTINATION FROM ST. LOUIS

	ARRIVALS				DEPARTURES				TOTAL		NO.	%
N	1 72S 4 DC9	19 D9S 32 SWM	1 72S 4 DC9	19 D9S 32 SWM	2 72S 8 DC9	38 D9S 64 SWM	112	10%				
NE	1 767 2 747 11 73S 26 72S 15 727	17 M80 13 L10 1 DC9 19 D9S 28 SWM	1 767 2 747 11 73S 26 72S 15 727	17 M80 13 L10 1 DC9 19 D9S 27 SWM	2 767 4 747 22 73S 51 72S 30 727	34 M80 26 L10 2 DC9 38 D9S 55 SWM	265	23%				
E	10 72S 9 727 6 M80 1 DC9	10 D9S 1 SF3 1 SWM	10 72S 9 727 6 M80 1 DC9	10 D9S 1 SF3 1 SWM	20 72S 18 727 12 M80 2 DC9	20 D9S 2 SF3 2 SWM	76	6%				
SE	1 733 1 73S 7 72S 1 727 5 M80 5 DC9	23 D9S 2 D9S 2 B11 4 SF3 29 SWM 2 BE9	1 733 1 73S 7 72S 1 727 5 M80 5 DC9	23 D9S 2 D9S 2 B11 4 SF3 27 SWM 2 BE9	2 733 2 73S 14 72S 2 727 10 M80 10 DC9	46 D9S 4 D9S 4 B11 8 SF3 56 SWM 4 BE9	162	14%				
S	4 72S 1 727	7 D9S 6 SWM	4 72S 1 727	7 D9S 6 SWM	8 72S 2 727	14 D9S 12 SWM	36	3%				
SW	1 747 1 733 8 73S 19 72S 9 727 18 M80	7 L10 2 DC9 22 D9S 3 SF3 18 SWM	1 747 1 733 8 73S 17 72S 9 727 18 M80	7 L10 2 DC9 22 D9S 3 SF3 18 SWM	2 747 2 733 16 73S 36 72S 18 727 36 M80	14 L10 4 DC9 44 D9S 6 SF3 36 SWM	214	19%				
W	1 767 1 733 6 73S 19 72S 11 727	6 M80 3 L10 6 D9S 5 SF3 40 SWM	1 767 1 733 6 L3S 19 72S 11 727	6 M80 3 L10 6 D9S 5 SF3 40 SWM	2 767 2 733 12 73S 38 72S 22 727	12 M80 6 L10 12 D9S 10 SF3 80 SWM	196	17%				
NW	4 72S 3 727 7 M80 5 DC9	14 D9S 3 D9S 8 SWM 2 PAG	4 72S 3 727 7 M80 5 DC9	14 D9S 3 D9S 8 SWM 2 PAG	8 72S 6 727 14 M80 10 DC9	28 D9S 6 D9S 16 SWM 4 PAG	92	8%				
Total:											1153	100%

DAILY COMMERCIAL FLEET MIX - MARCH, 1987
NUMBER AND TYPE OF AIRCRAFT
BY ORIGIN-DESTINATION FROM ST. LOUIS

	ARRIVALS	DEPARTURES	TOTAL	NO.	%
N	2 72S 16 D9S 6 DC9 23 SWM	2 72S 14 D9S 6 DC9 23 SWM	4 72S 30 D9S 12 DC9 46 SWM	92	9%
NE	2 767 12 L10 2 747 1 DC9 1 733 19 D9S 8 73S 2 D95 25 72S 1 SF3 15 727 13 SWM 15 M80	2 767 12 L10 2 747 1 DC9 1 733 19 D9S 8 73S 2 D95 23 72S 1 SF3 15 727 13 SWM 15 M80	4 767 24 L10 4 747 2 DC9 2 733 38 D9S 16 73S 4 D95 48 72S 2 SF3 30 727 26 SWM 30 M80	230	22%
E	11 72S 1 DC9 9 727 7 D9S 7 M80 1 SF3	11 72S 1 DC9 9 727 7 D9S 7 M80 1 SF3	22 72S 2 DC9 18 727 14 D9S 14 D9S 2 SF3	72	7%
SE	1 733 28 D9S 1 73S 1 D95 10 72S 1 SF3 5 M80 11 SWM 5 DC9 2 PAG	1 733 28 D9S 1 73S 1 D95 10 72S 1 SF3 5 M80 10 SWM 4 DC9 2 PAG	2 733 56 D9S 2 73S 2 D95 20 72S 2 SF3 10 M80 21 SWM 9 DC9 4 PAG	128	13%
S	3 72S 2 D95 1 727 2 SWM 6 D9S	3 72S 2 D95 1 727 2 SWM 6 D9S	6 72S 4 D95 2 727 4 SWM 12 D9S	28	3%
SW	1 767 6 L10 1 747 2 DC9 12 73S 18 D9S 16 72S 3 SF3 10 727 24 SWM 20 M80	1 767 6 L10 1 747 2 DC9 12 73S 18 D9S 16 72S 3 SF3 9 727 24 SWM 19 M80	2 767 12 L10 2 747 4 DC9 24 73S 36 D9S 32 72S 6 SF3 19 727 48 SWM 39 M80	224	22%
W	1 767 3 L10 6 73S 6 D9S 21 72S 1 D95 7 727 4 SF3 7 M80 33 SWM	1 767 3 L10 6 73S 6 D9S 21 72S 1 D95 7 727 4 SF3 7 M80 33 SWM	2 767 6 L10 12 73S 12 D9S 42 72S 2 D95 14 727 8 SF3 14 M80 66 SWM	178	17%
NW	2 72S 1 D95 2 727 1 SF3 6 M80 5 SWM 5 DC9 2 PAG 14 D9S	2 72S 1 D95 2 727 1 SF3 6 M80 5 SWM 5 DC9 2 PAG 14 D9S	4 72S 2 D95 4 727 2 SF3 12 M80 10 SWM 10 DC9 4 PAG 28 D9S	76	7%
			Total:	1028	100%

San Juan, P.R.; but added two other southeastern cities: Harrison, Ark. and Freeport, Bahamas. TWA also added a non-stop flight to Honolulu in the southwest. The south, southeasterly and southwesterly destinations had the highest percentage of commuter operations. Chicago had the most frequent non-stop service from St. Louis, followed by Kansas City, Washington, D.C. and New York.

The most recent data available in the March 15, 1987 edition of the OAG shows two cities (Harrison, Arkansas and Rochester, Minnesota) dropped from direct service, resulting in a total of 89 cities with non-stop service. However, in April and May, 1987, TWA is adding direct service to two southwestern cities (Long Beach and Orange County, California) as well as another city to the east. (Lexington, Kentucky). Exhibit 3-A locates all 89 cities currently served non-stop from Lambert-St. Louis in March, 1987. (See Appendix A-37 for full listing of all cities served.)

TWA's direct service to Europe, dropped in 1986 due to U.S. tourist apprehension about terrorism, is scheduled to resume this spring. They plan to add a flight to London (4206 miles) in April and a flight to Frankfurt (5280 miles) in early May.

3.4 Current Cargo Service

Lambert-St. Louis currently has three separate cargo areas. Cargo City is on the passenger terminal side of the airport serving commercial passenger aircraft carrying "belly cargo" which

park at the passenger gates. The Air Terminal Services (ATS) cargo area serves a mixture of all-cargo and small package express carriers. The Saberliner area is used mainly by small package express carriers. Combined, these facilities enplaned 94,290 tons of mail and cargo in 1985, approximately 36% more cargo than they handled in 1983, (18). Flying Tigers and Zantop are the two all-cargo certified route carriers which serve St. Louis. The major existing components of air cargo to and from the St. Louis area are auto parts, aircraft and food manufacturing products.

4.0 FLIGHT SERVICE FORECAST

The changing airline industry, as previously discussed, has already had a significant impact on the St. Louis region and will play an even greater role in the future configuration of the St. Louis airport system.

Historically, the growth of the airline industry in a specific location followed a relatively predictable pattern. A study of the demographics of the region usually provided a fairly clear picture of the airline market potential. The regional population base, disposable income, age of the population, industry and retail sales base gave planners a strong indication of direction for future projections. This predictability has decreased sharply since deregulation of the aviation industry resulted in rapidly changing flight service patterns. Today, the selection of an airport for an airline hub, and a particular airline's success in the deregulated marketplace are more important in forecasting airport-specific traffic levels than traditional economic and demographic tracking, (19). The following section outlines the growing trends likely to affect Lambert-St. Louis by examining the implications of current air carrier, commuter and cargo service, as well as the regional developments most likely to shape future service.

4.1 Air Carrier Operations

An inspection of the fleet mix serving Lambert-St. Louis in December, 1986 (see Exhibit 3-D) shows jet service predominantly provided by short- and medium-range, two-engine narrowbody jets (DC9, M80, 73S, 733). This trend can be expected to continue, considering St. Louis' central location with radiating spoke service to many surrounding cities as well as the anticipated growth of this category of aircraft within the domestic airline fleet. By 1998, two-engine narrowbody aircraft are expected to account for 60.5% of the total fleet, up from 39.1 percent in 1986, (20). This trend reflects the fact that the prospect for continued expansion and development of hub airports increases the importance of higher frequencies and the demand for aircraft with smaller capacities.

The long-range three- and four-engine widebodies (L1011 and 747) were flown on the northeasterly and southwesterly routes, where large, distant hub areas like New York, Boston, and Los Angeles account for their use. In December, L1011 operations increased noticeably from their March levels in the long-range destinations to the northeast and southwest, while they dropped out of the southeastern, closer-range market. This may be due to TWA's redeployment of Ozark's smaller, shorter-range DC9's in close-range cities after consolidation, freeing larger and longer-range aircraft for more distant cities.

By assuming a 60% load factor for air carriers (50% for commuters), it is possible to project the number of enplanements per direction from the above origin-destination studies for March and December, 1986 and March, 1987. This calculation shows slight growth in enplanements to the north and east, while the south and southwest lost a small number of enplanements by December. (See Exhibit 4-A.)

One method of providing additional capacity is by increasing the size of aircraft, but this trend now appears to have reversed with frequency of service becoming more important. Thus, the average commercial aircraft size, nation-wide, actually declined by one-half seat in 1987. However, it is expected that the average size will grow slightly by about one seat per year through 1989 and will increase by 2 to 3 seats a year thereafter. By 1998, the average seating capacity of a domestic aircraft is expected to be 177 seats (about the size of an M80), up from 153 seats in 1986, (21).

As noted above, there was a slight change in cities served during the past year. However, since the deleted cities in the southeast were replaced with two other cities in the same direction, this change reflects the tendency toward expansion and contraction within existing markets, rather than the addition of new markets. This is a trend that can be anticipated in the future, with only minor, interior shifts rather than significant innovations.

Lambert/St. Louis International Airport
ENPLANEMENTS BY ORIGIN-DESTINATION DIRECTION
March, 1986-March, 1987

Direction	Daily Enplanements		Change	Daily Enplanements		Change
	March, 86	Dec., 86	%	March, 86	March, 87	%
N	1,601	1,806	+13%	1,601	1,724	+8%
NE	10,541	10,267	-3%	10,541	9,771	-7%
E	2,911	3,094	+6%	2,911	3,030	+4%
SE	3,998	3,808	-5%	3,998	3,930	-2%
S	1,243	1,018	-18%	1,243	982	-21%
SW	7,929	6,916	-13%	7,929	7,692	-3%
W	5,293	5,168	-2%	5,293	4,955	-6%
NW	3,200	2,860	-10%	3,200	2,332	-27%
Total:	36,716	34,937	-5%	36,716	34,416	-6%



DECLINE



GROWTH

Air Carrier Enplanements: no. of operations \times seat capacity \times 60% load factor
Commuter Enplanements: no. of operations \times seat capacity \times 50% load factor

Appendix A
Exhibit 4-A

TAMS
3/25/87

4.2 Commuter Operations

According to the FAA, commuter traffic is expected to grow at an average annual rate of 8.7%. Starting from a base of 69,000 commuter enplanements at Lambert-St. Louis in 1985, the FAA Terminal Area Forecast for St. Louis expects 126,000 in 1990 and 199,000 by the year 2000.

1985 appears to have been a period of transition for the regional commuter airline industry. There has been a gradual stabilization in the number of markets served by the large jet operators, a proliferation of alignments with larger commercial air carriers through code-sharing agreements, and a continuing decline in the total number of regional/commuter operators. However, those who have survived this transitional period are larger and more stable airlines as a result. Commuter operations at Lambert-St. Louis follow this pattern.

It is expected that the average number of seats per aircraft, the number of city-pairs served, and the average passenger trip length will increase over the next 15 years. After the TWA/Ozark consolidation, for example, a small number of 6/8 seat commuter operations (BE9, PAG) were replaced by a 15-seat commuter aircraft (SWM). Some of TWA's routes, previously served by DC9's showed changed service in December with more frequently scheduled 15-seat turboprop (SWM) operations.

The 15-19 seat category of commuter aircraft currently represents the largest portion of the domestic airlines' commuter fleet, 36.5% in 1985. While this category will continue to account for the largest portion of the fleet for the next 15 years, the fastest growing segment of the market will be in the 20-40 seat and greater-than-40 seat market. This trend toward larger aircraft in the commuter fleet will increase the average seat per aircraft from 19.4 in 1985 to 27.7 seats in 1997, (22).

It is assumed that commuter operations will continue to serve primarily those markets under 200 miles where they are now concentrated, (see Exhibit 3-A2). Growth achieved through replacement of air carrier service has just about run its course and should cease to be a major factor. Future industry growth is expected to come from increased demand placed on a mature, stable commuter airline industry. That assumption is compatible with our projection of future expansion within existing markets at St. Louis.

4.3 Cargo Operations

Deregulation has also led to major changes in the air cargo industry, changes which significantly affect operations at Lambert. Traditional all-cargo airlines (i.e., Flying Tigers) have been faced with heightened competition from package express carriers, air freight forwarders, and deregulated truckers. In

addition, the increase in passenger aircraft services permitted by deregulation and introduction of shorter range wide-body aircraft, has increased available belly-capacity, further depressing the prices charged by traditional cargo operators.

Despite the recent difficulties of traditional all-cargo carriers, however, a number of factors suggest promising future growth for the air cargo industry.

4.3.1 Industrial Cargo

The shift of major U.S. industries, such as auto manufacturing, to just-in-time production systems and off-shore sourcing, combined with the rapid rates of economic growth in the Pacific Basin - an area best served by air for many cargoes - leads most industry forecasters to project solid growth even for the traditional air cargo industry.

Due to its proximity to major U.S. industrial manufacturing centers, St. Louis could serve as a major cargo gateway between these areas and Asia. Asian carriers are clamoring for access to Chicago in order to reach these Midwestern industrial centers, but due to international political reasons, it is unlikely they will serve Chicago for some time. Cargo carriers could use St. Louis as an effective alternative to Chicago, a possibility which has some appeal to foreign airlines.

4.3.2 Small Package Express

Federal Express and its competition have revolutionized industrial inventory management and established business patterns through the development of assured next-day delivery for high value parts and documents. Freedom of entry has enabled carriers to establish efficiently sized hub-and-spoke systems which can economically provide next-day service to widely dispersed markets.

For a variety of reasons small package express carriers require a centrally located hub to serve the entire U.S. market with next-day service. This is why Federal Express has a hubbing operation at Memphis, UPS at Louisville, Airborne Express and Emery in Ohio, and Purolator temporarily in Indiana. The establishment of a small package express and freight forwarding hub is today the key factor in a region's ability to exploit the economic benefits of this growth in air transportation, (23).

4.3.3 Cargo Operation Trends

Federal Express is planning to establish a new Midwest-based national hub for its air express business in addition to its Memphis facility, and is already acquiring wide-body freighters for this expansion. Federal Express founder, Frederick W. Smith announced in January, 1987 that, as part of their study of a second national sorting hub, company officials are looking at an oval-shaped geographic area that includes the states of Missouri,

Illinois, Indiana, Kentucky and Tennessee, (24). The new hub reputedly has the potential to be as big as the Memphis operation, which has almost reached its full capacity. The supplementary hub, due to open about 1990, would begin as a "controlled national" hub involving 20-30 cities. The facility would be capable of becoming national and would most likely take that direction. It would undoubtedly be affected as well by Federal Express' anticipated expansion in international operations.

The heavy and growing package freight traffic has transformed the Indianapolis Control Center's midnight shift into one of the most active night-time operations in the FAA's air traffic service, where approximately 260 aircraft arrive in an even stream in less than three hours. Indianapolis Center covers a broad section of the Midwest, stretching to West Virginia in the east to the Kentucky-Tennessee border, to Illinois and the northern part of Indiana, (25)

4.4 Regional Economic Impact on Flight Service Trends

Future economic growth in the St. Louis area is anticipated largely in the expansion of the existing aircraft industry plus the "Big Three" automobile manufacturers which operate five assembly operations in or near St. Louis. Four new assembly facilities are expected to be operational by 1989 within 500 miles of the St. Louis/Southwestern Illinois market area, (26). Since

1980, American car manufacturers have invested over \$1.6 billion in Missouri. Interest of this magnitude has prompted the Department of Commerce to note that there is a trend toward movement of automobile assembly operations back to the heart of the Midwest.

Automobile parts now account for approximately 80% of inbound freight on all-cargo airlines which transit St. Louis. Approximately 70% of all-cargo airlines' outbound freight from St. Louis is associated with the automobile industry. The "just-in-time" inventory system, whereby suppliers are required to deliver parts and materials just-in-time to meet production schedules, is an important component for the assembly plants clustered in this region. Therefore, adequate cargo facilities and airport capacity allowing expansion of this system become crucial considerations in planning for regional economic growth. The structure of any future airport system in St. Louis must be able to accommodate both projected increases in passenger growth as well as the expanding freight operations of a large cargo hub.

4.5 Fleet Mix Forecast

The current fleet mix (1984-1986) operations at Lambert-St. Louis consist of air carrier, air commuter and air taxi, general aviation, and military operations.

From observations conducted at the airport the principal military operations are aircraft produced by McDonnell-Douglas and Air National Guard operations. General aviation operations fall into the category of business aircraft with minimal recreational flights. Air taxis and commuters vary from small 6-8 place aircraft to 50 passenger multi-engine turbine powered aircraft.

The air carrier fleet will continue to grow in size but not to the extent that it has in the past. Present operations relate to frequent service with smaller vehicles. Current production emphasizes this trend. According to FAA the average commercial airliner will contain 177 seats in 1998 as compared to 153 in 1986 a 15% increase. Load factors are expected to increase from 60.8 percent to 63.7% in the same time span. The total gain in capacity is 20%.

In 1985 the annual operations at Lambert consisted of 66% air carrier, 17% commuter, 13% general aviation and 2% military.

In the year 2000 FAA forecasts that these percentages will change to 70, 25, 4, and 1 respectively.

Of the commercial service aircraft 75% are turbine powered jets and the balance are turbo-prop or smaller aircraft.

By the year 2000 this mix will change to approximately 86% and 14% respectively.

As the general aviation use of Lambert-St. Louis is primarily associated with business at Lambert-St. Louis or in the vicinity of the airport, little change is expected in its composition.

While the FAA forecasts that air carrier aircraft will grow in size during the next 20 years, due to the geographic location of the markets served, it is believed that the fleet at Lambert-St. Louis will continue to be predominately made up of 2 engine narrow body jet aircraft.

5.0 Summary

Aircraft operations, passenger enplanements, air freight and general aviation operations continue to grow at Lambert-St. Louis and are forecast to continue to grow despite the fact that the airport is subject to severe congestion at certain periods of the day and under certain weather conditions.

While flights remain relatively constant during the week there is a seasonal variation between winter and summer.

The origins and destinations of the flight remain relatively constant. Traffic growth is between existing origins and destinations rather than between a significant number of new market entries.

The consolidation of TWA and Ozark has resulted in some consolidation and some changes in equipment but has not provided a significant increase in airport capacity.

Fleet size has changed. Large wide-body aircraft are decreasing in numbers and small commuter aircraft are increasing in size. Capacity relief on the air side will be minimally achieved through a slight increase of commercial jet aircraft.

Air freight has grown but "all-cargo" volumes have not materially increased.

Automobile parts constitute a major portion of air freight. With the expanding markets in the mid-west and sourcing of parts from Japan and Korea it would appear that lack of facilities at Lambert-St. Louis will divert potential "all-cargo" shipments to other localities.

The package carrier industry continues to grow at a rapid pace. A great majority of "hubbing" for package carriers occurs in the midwestern states. Facilities for a hubbing operation at Lambert-St. Louis do not exist and space is limited for an efficient operation of this type.

FOOTNOTES:

- (1) Federal Aviation Administration, FAA Terminal Area Forecasts FY 1985-2000, Central Region - St. Louis Table.
- (2) The Washington Post, January 29, 1987, p.E1.
- (3) Department of Transportation, Airport Capacity Enhancement Plan, DOT-TSC-FAA-86-2, 1986.
- (4) U.S. News & World Report, December 22, 1986, p.16.
- (5) Feasibility Study for Joint Military-Civilian Use of Scott AFB, TAMS/IPAC, April, 1986, p.14.
- (6) U.S. News & World Report, December 22, 1986, p.16.
- (7) Lopuszynski, Andrew J., Perspectives on Airline Hubbing in the US, FAA, Summer, 1986, p.22.
- (8) TAMS/IPAC, Feasibility Study for Joint Military-Civilian Use of Scott AFB, April, 1986, pp.14-49.
- (9) U.S. News & World Report, December 22, 1986, p.16.
- (10) "Air Travel: How Safe Is It", Time, January 12, 1987, p.27.
- (11) Federal Aviation Administration, FAA Aviation Forecasts, FY 1987-1998, p.106.
- (12) U.S. News & World Report, December 22, 1986, p.15.
- (13) Federal Aviation Administration, FAA Aviation Forecasts, FY 1987-1998, pp.107-110.
- (14) U.S. News, Dec. 22, 1986, p. 16.
- (15) Dun & Bradstreet, Official Airline Guide, December, 1986 edition.
- (16) Federal Aviation Administration, FAA Aviation Forecasts, FY 1987-1998, p.109.
- (17) TAMS/IPAC, Joint Use Feasibility Study, p. 3-2.
- (18) Department of Transportation, Airport Activity Tables, 1985, p.16.
- (19) TAMS/IPAC, Joint Use Feasibility Study, p. 3-1.

- (20) Federal Aviation Administration, FAA Aviation Forecasts, FY 1987-1998, p.42.
- (21) Federal Aviation Administration, FAA Aviation Forecasts, FY 1987-1998, p. 38.
- (22) Federal Aviation Administration, FAA Aviation Forecasts, FY 1987-1998, p. 46.
- (23) TAMS/IPAC, Joint Use Feasibility Study, TAMS/IPAC, p.2-3.
- (24) Aviation Week & Space Technology, January 26, 1987, p. 45.
- (25) Aviation Week & Space Technology, February 23, 1987, p.37.
- (26) Automobile Parts Industry Opportunities, Southwestern Illinois Metropolitan and Regional Planning Commission, December, 1985.

GLOSSARY:

air carrier operations - arrivals and departures performed by aircraft certificated as air carriers in accordance with FAA guidelines. In this study, all regularly scheduled commercial passenger jet operations

air taxi operations - arrivals and departures performed by small aircraft authorized to perform "on demand" service; hired for specific rather than scheduled transportation

air traffic hub - cities and Metropolitan Statistical Areas requiring aviation services, often including more than one airport. In this study, all commercial airports with regularly scheduled air carrier operations within a 50-mile radius of the U.S. cities served by the twelve busiest airports

The FAA divides communities into four hub categories determined by each community's percentage of total enplaned passengers by scheduled air carriers in the U.S., which are as follows:

Large hub:	1.00 percent
Medium hub:	0.25 percent to 0.999 percent
Small hub:	0.05 percent to 0.249 percent
Nonhub:	less than 0.05 percent

CMSA - Consolidated Metropolitan Statistical Area. Standard measurement used by the U.S. Census Bureau in accounting for the population of two or more Metropolitan Statistical Areas that overlap or share a common central urban core.

commuter operations - in this study, all regularly scheduled commercial passenger operations by aircraft other than jets (i.e., propeller and turboprop), serving cities within 250 nautical miles of St. Louis

deregulation - a general U.S. policy change, formalized in the Airline Deregulation Act of 1978, which allowed the airline industry to be governed by free market forces rather than by governmental programs administered by the Civil Aeronautics Board

fleet mix - the total variety of aircraft serving a particular airport or airline at a given time

general aviation operations - all arrivals and departures by noncommercial, private aircraft

military operations - all arrivals and departures performed by aircraft not classified as civil by the FAA

MSA - Metropolitan Statistical Area. Defined by the U.S. Census Bureau as a geographic area consisting of a large population nucleus (1 million or more inhabitants), together with adjacent communities having a high degree of economic and social integration.

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2. Department of Transportation, Airport Activity Tables, Dec. 31, 1981, 1983, 1985
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December 1, 1986, March 15, 1987
4. "Economic Benefit of the Airport to the Community", Airport Management Journal, April, 1976
5. Federal Aviation Administration, FAA Aviation Forecasts, FY 1986-1997, February 1986
6. Federal Aviation Administration, FAA Aviation Forecasts, FY 1987-1998, February 1987
7. Federal Aviation Administration, FAA Terminal Area Forecasts, FY 1986-2001
8. Federal Aviation Administration, Long-Range Forecasting of Airport Congestion and Air Traffic Delay, October, 1986
9. Lopuszynski, Andrew J., Perspectives on Airline Hubbing in the U.S., Summer, 1986
10. McDonnell Douglas, Outlook for Commercial Aircraft 1985-1999, Sept. 1985
11. Ott, James, "Air Express Growth Creates Night Rush at Midwest Center", Aviation Week & Space Technology, February 23, 1987
12. Ott, James, "Federal Express Plans New Hub", Aviation Week & Space Technology, January 26, 1987
13. Parker, Laura, "Deal to Reduce Flight Delays", Washington Post, January 29, 1987
14. TAMS/IPAC, Feasibility Study for Joint Military Civilian Use of Scott Air Force Base, April, 1986
15. "The Air Traffic Mess", U.S. News & World Report, December 22, 1986
16. Southwestern Illinois Metropolitan and Regional Planning Commission, Automobile Parts Industry Opportunities, December, 1985

APPENDIX B

APPENDIX B

ANALYSIS OF AIR TRAFFIC PATTERNS
LAMBERT-ST. LOUIS INTERNATIONAL AIRPORT
1985-1986

As a part of the study to review the forecast of growth at Lambert-St. Louis International Airport (Lambert-St. Louis) air traffic was plotted for 1984, 1985, and 1986. The following charts depict the results of this review.

The charts include:

1. Operations by day of the month for each of the 36 months broken down into air carrier, air commuter and air taxi combined, general aviation and military. Exhibits B1-B36.
2. Monthly summaries of these operations by year for each of the above categories. Exhibits B37-B39.

Based on this sample of actual traffic as reported by ATC, the following observations were made:

1. Air carrier (AC) traffic remains relatively constant during week days and reduces on weekends.
2. Commuter traffic (AT) drops off more rapidly over the weekend.

3. General aviation (GA) traffic, while at a relatively low level, follows the same pattern as commuter operations.
4. Military traffic comprising the smallest percentage of total traffic remains relatively constant by day of week.
5. Bad weather impacts on total operations when there are severe storms.
6. There is a seasonal peaking in the summers and drop-off in the winters.
7. The lowest number of air carrier operations occurred in February 1984, (700 per day) and the highest in August 1986, (870 per day).
8. Despite seasonal variations, there is a positive growth when comparing comparable growths for 1984, 1985 and 1986.

In a further review of operational activity, the OAG schedules for a typical day in March and December 1986 and March 1987 were summarized. The three peaks illustrate the impact of hubbing and it would be difficult to increase capacity by trying to squeeze in a fourth cycle. In other words, it would appear that little additional capacity is available from "filling in the gaps" (see Exhibit B-40 Rev.).

Based on FAA's forecast of air traffic on a national level and on the FAA terminal area forecast for Lambert-St. Louis through the year 2000, a combined forecast was prepared through the year 2005 (see Exhibits B-41 and B-42).

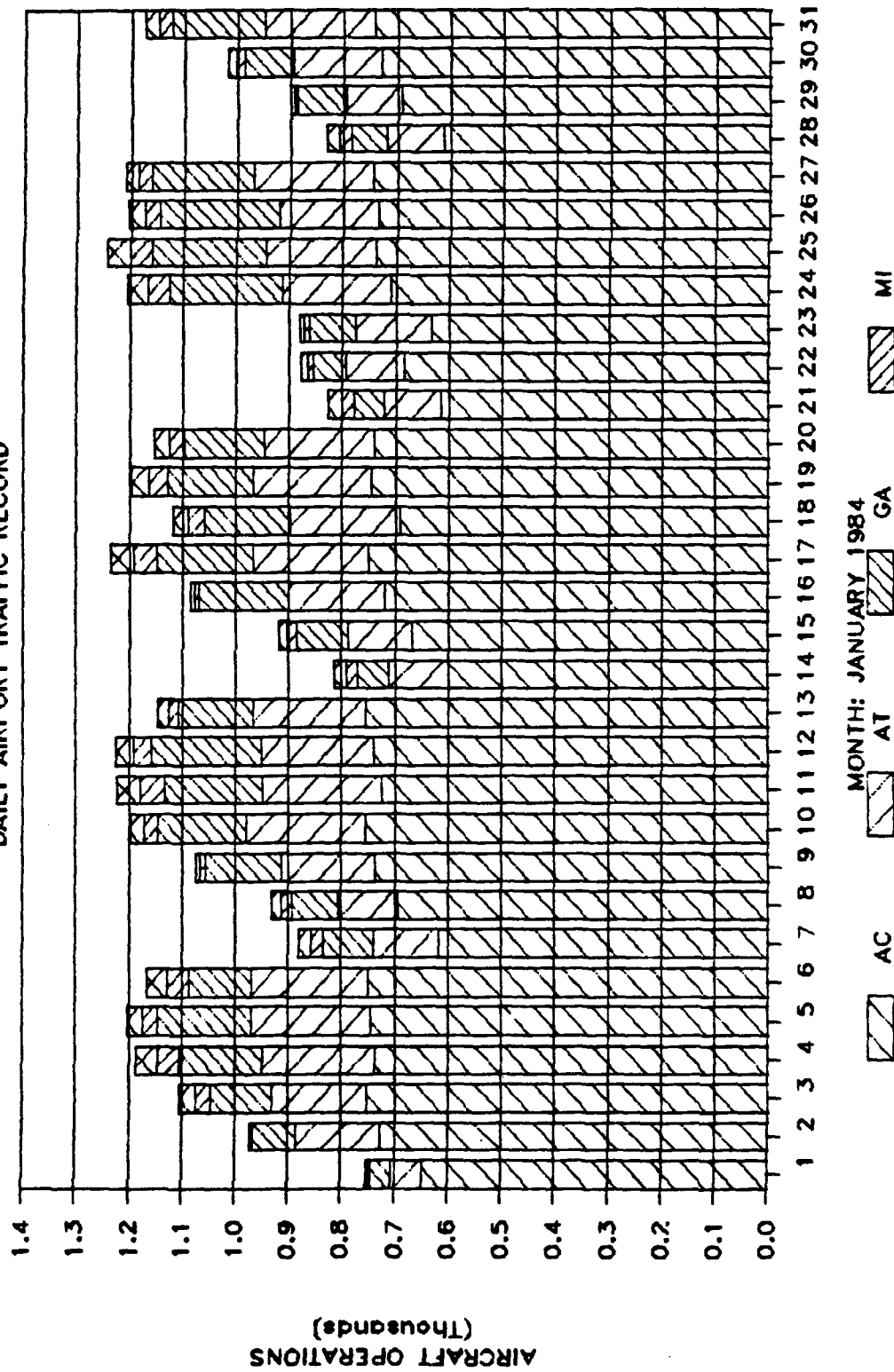
The following observations are made:

1. The rate of growth slows down in the post 2000 era.
2. Commuter operations grow at a faster rate than air carrier.
3. Lambert-St. Louis is forecast to remain at approximately 2.5% of the national total.

FAA forecast, while not totally unconstrained do not reflect limitations in capacity.

LAMBERT INTERNATIONAL AIRPORT

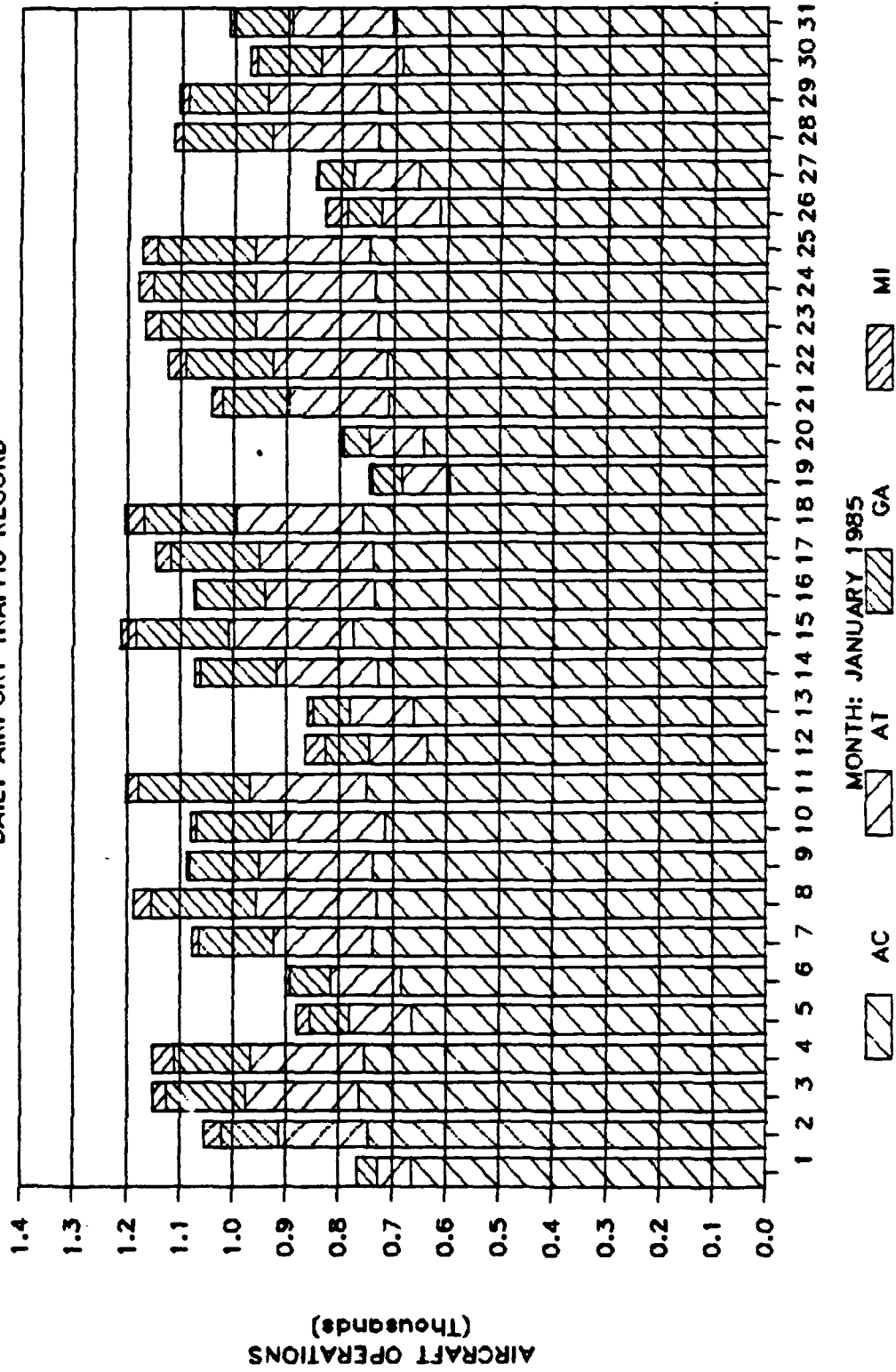
DAILY AIRPORT TRAFFIC RECORD



Source: St. Louis Airport Tower Records, 1984-1986

LAMBERT INTERNATIONAL AIRPORT

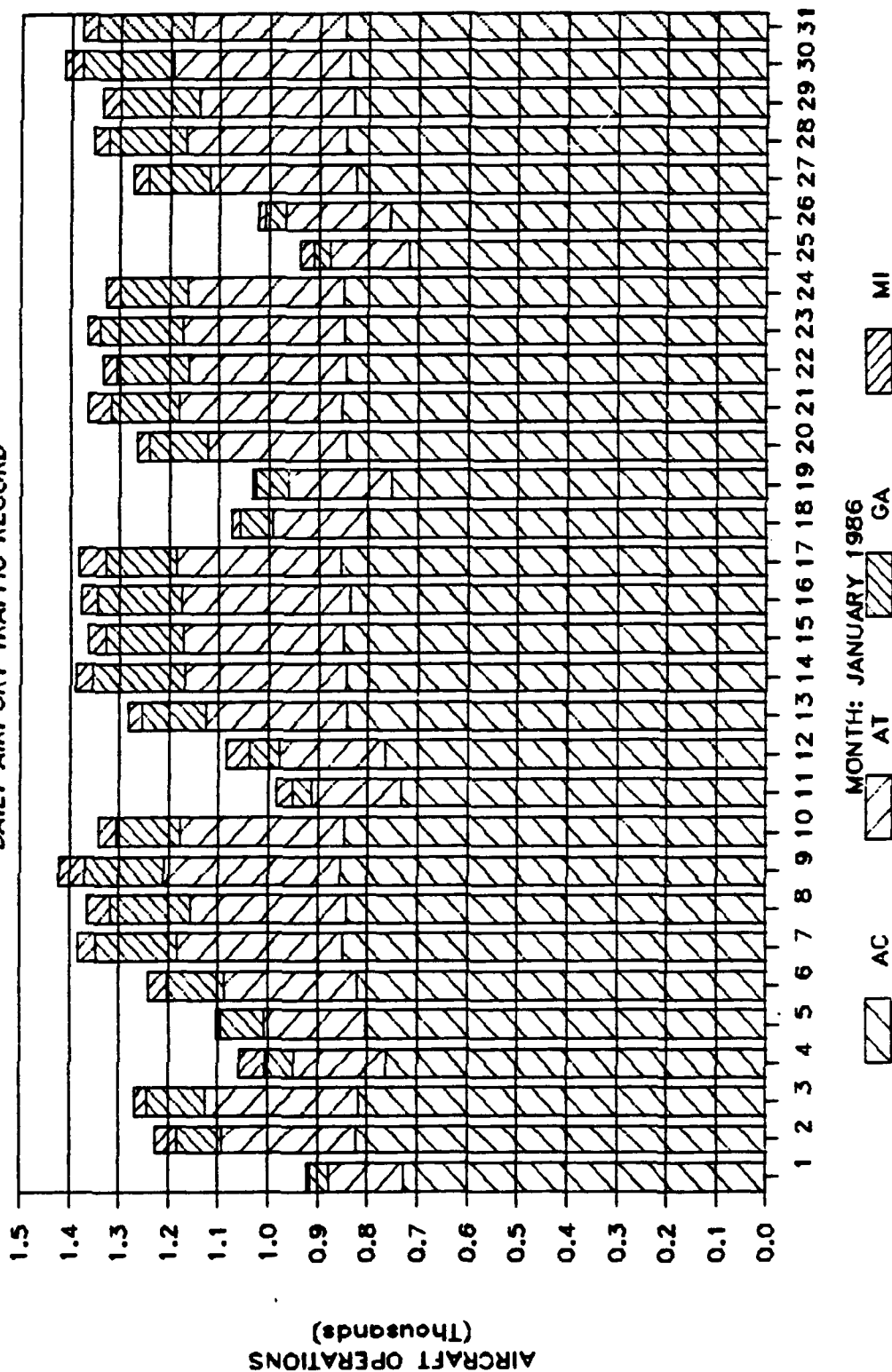
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Source: St. Louis Airport Tower Records, 1984-1986

LAMBERT INTERNATIONAL AIRPORT

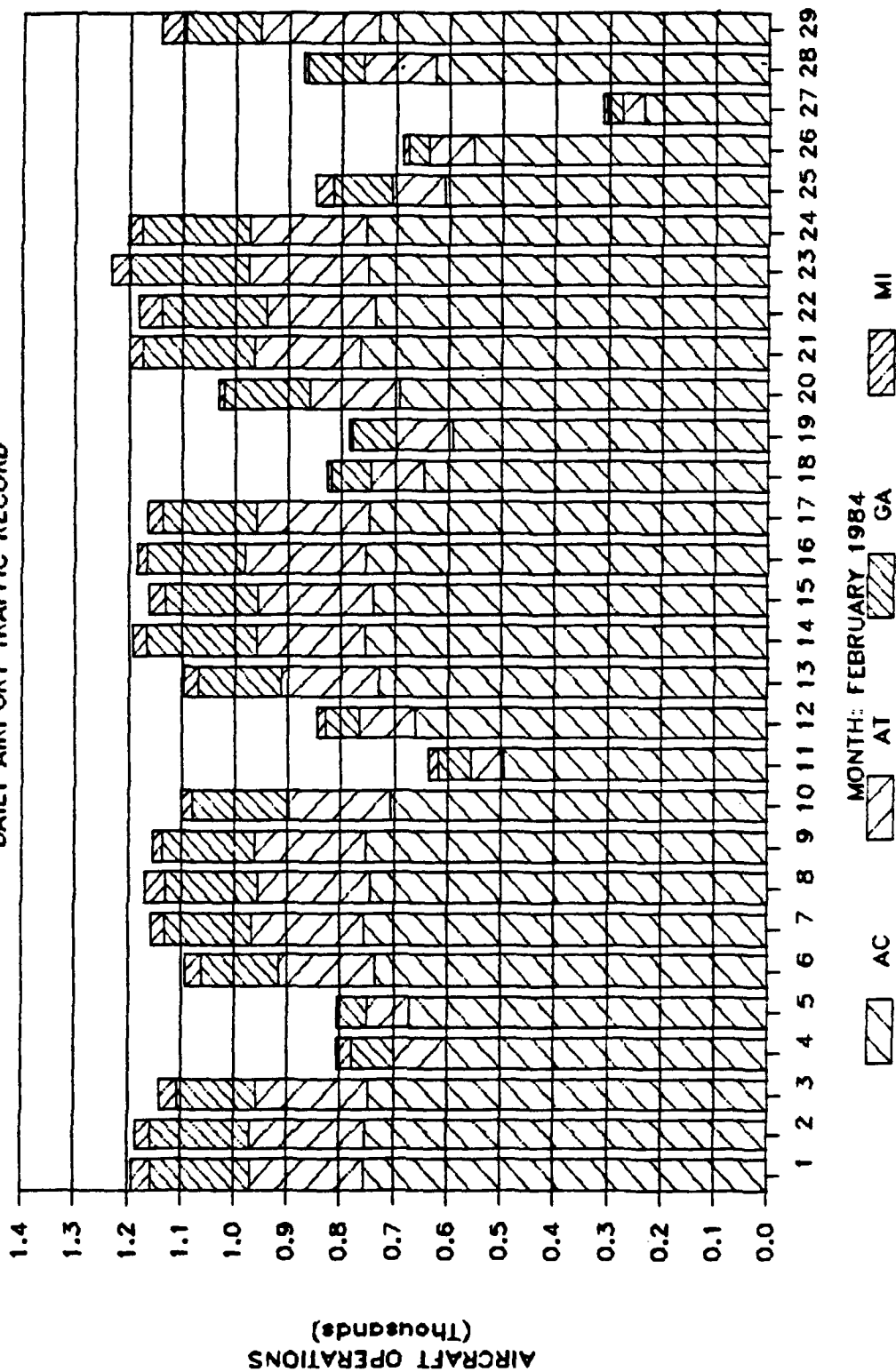
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Source: St. Louis Airport Tower Records, 1984-1986

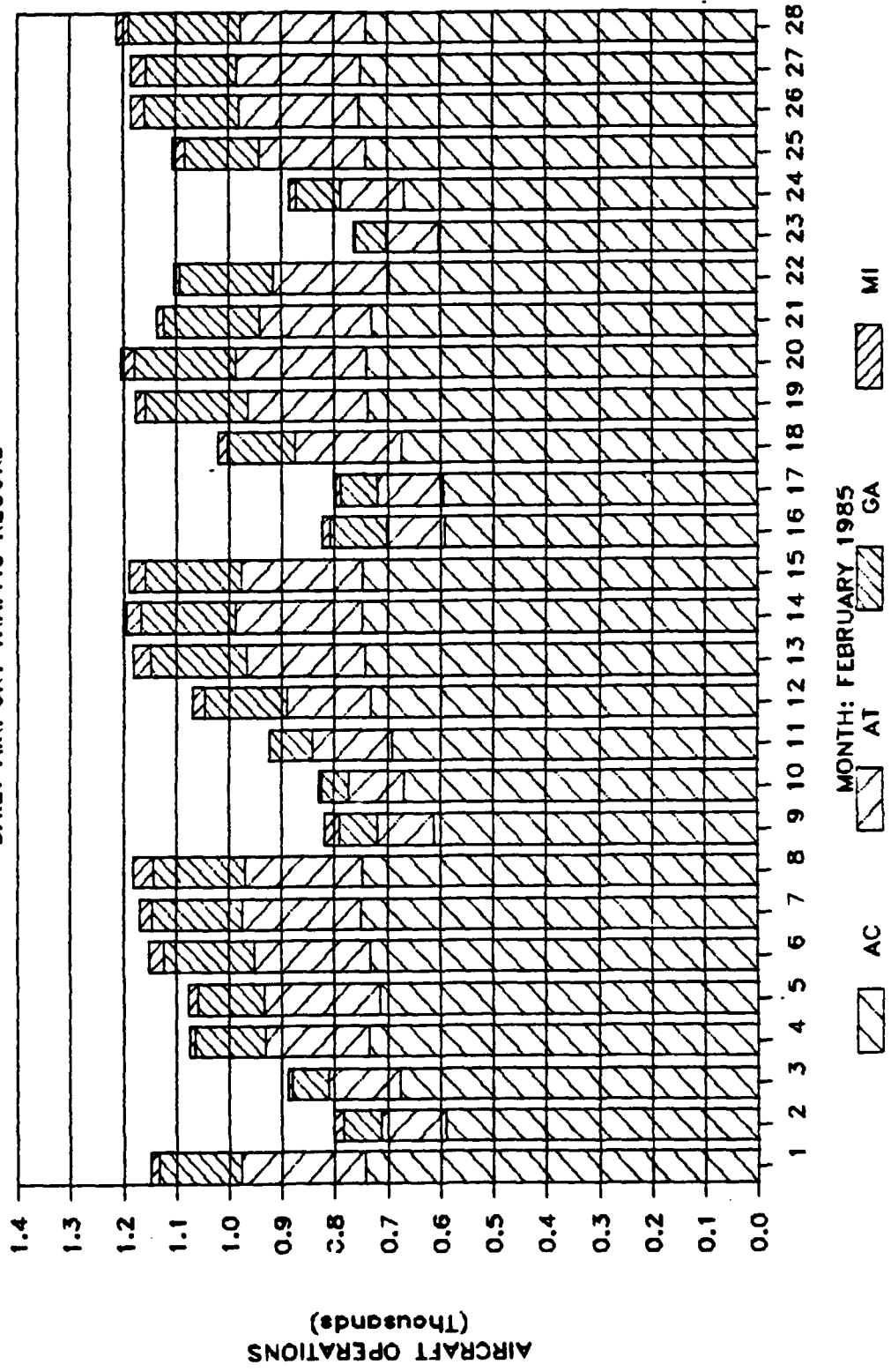
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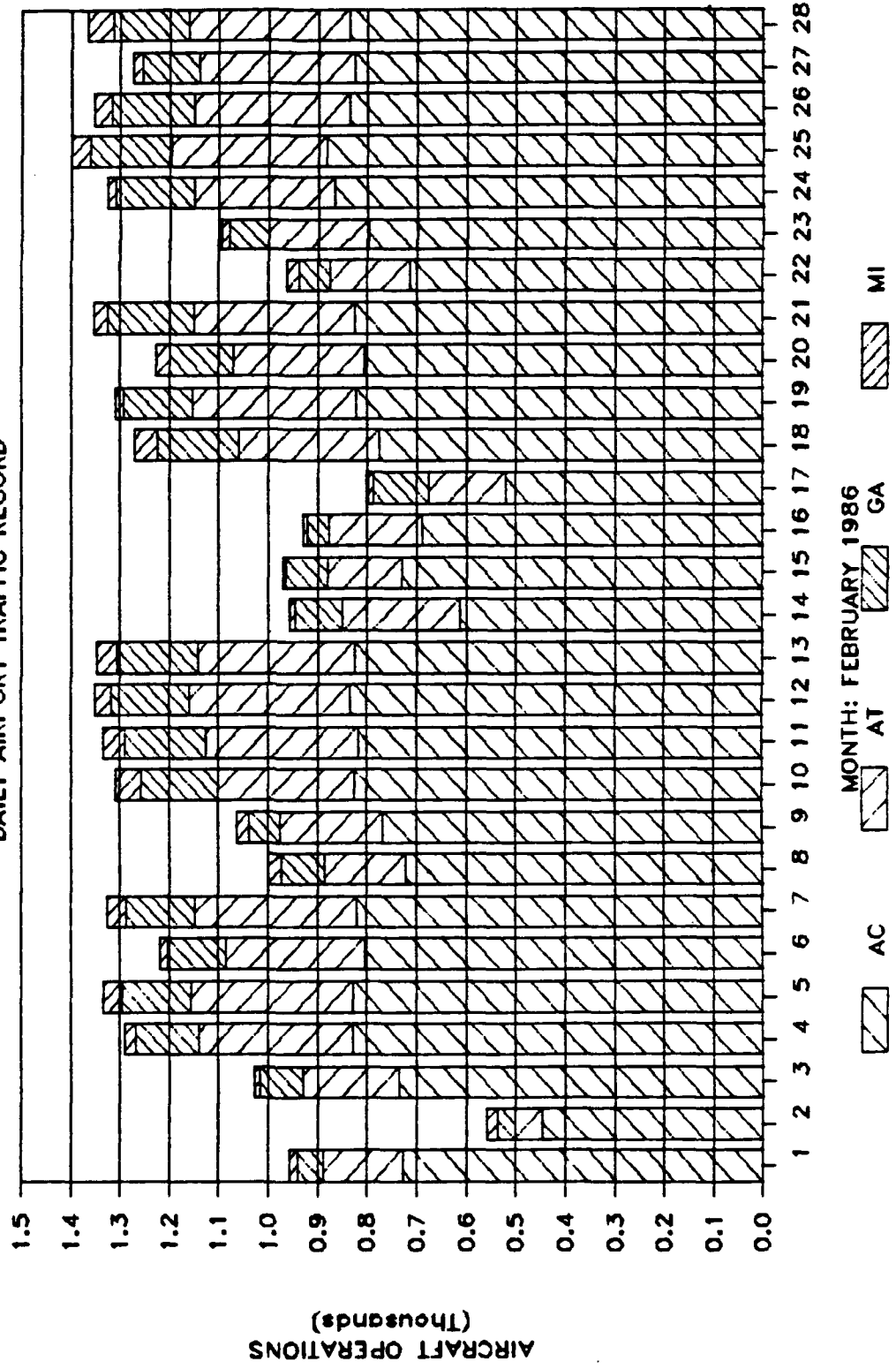
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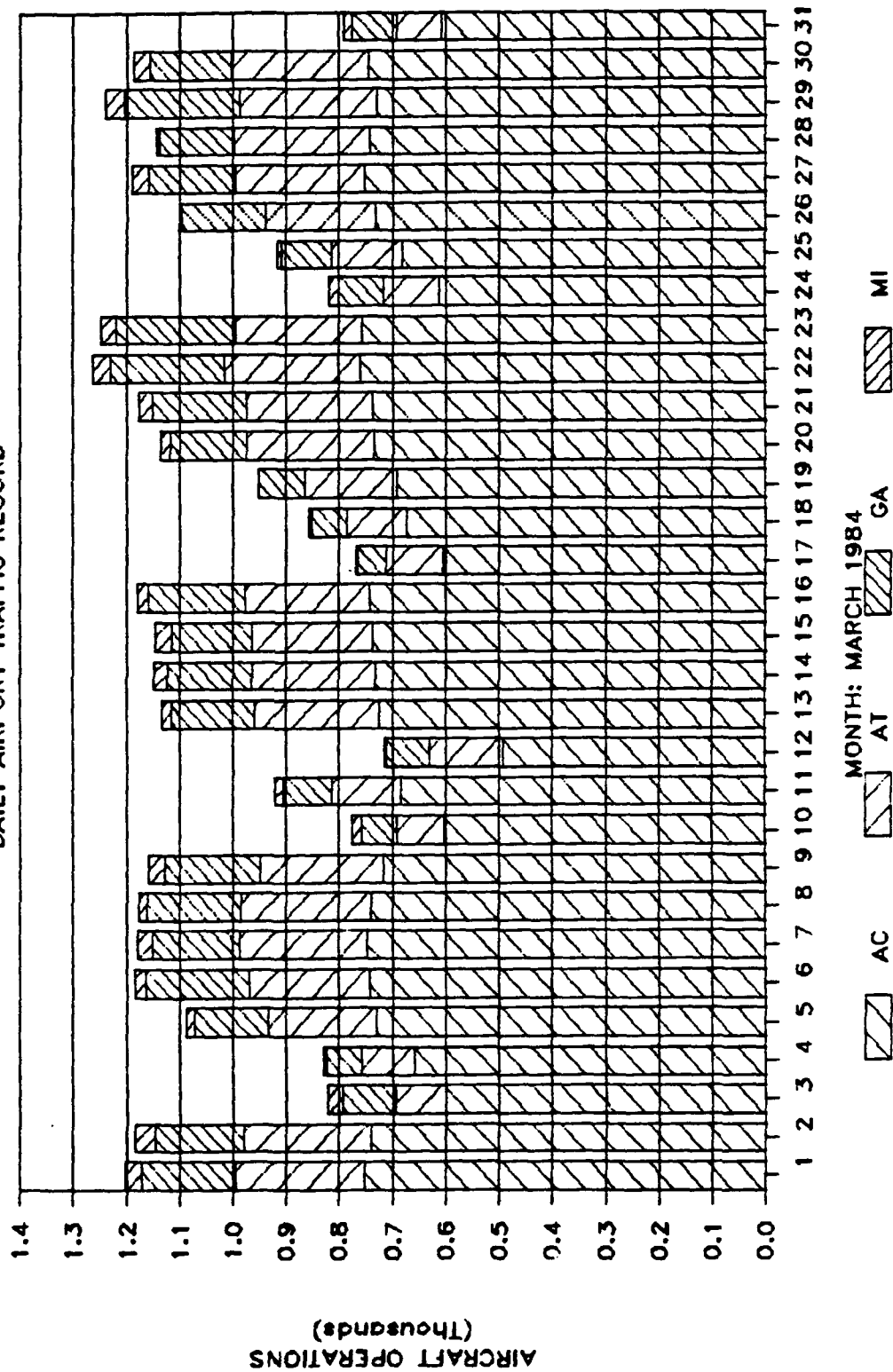
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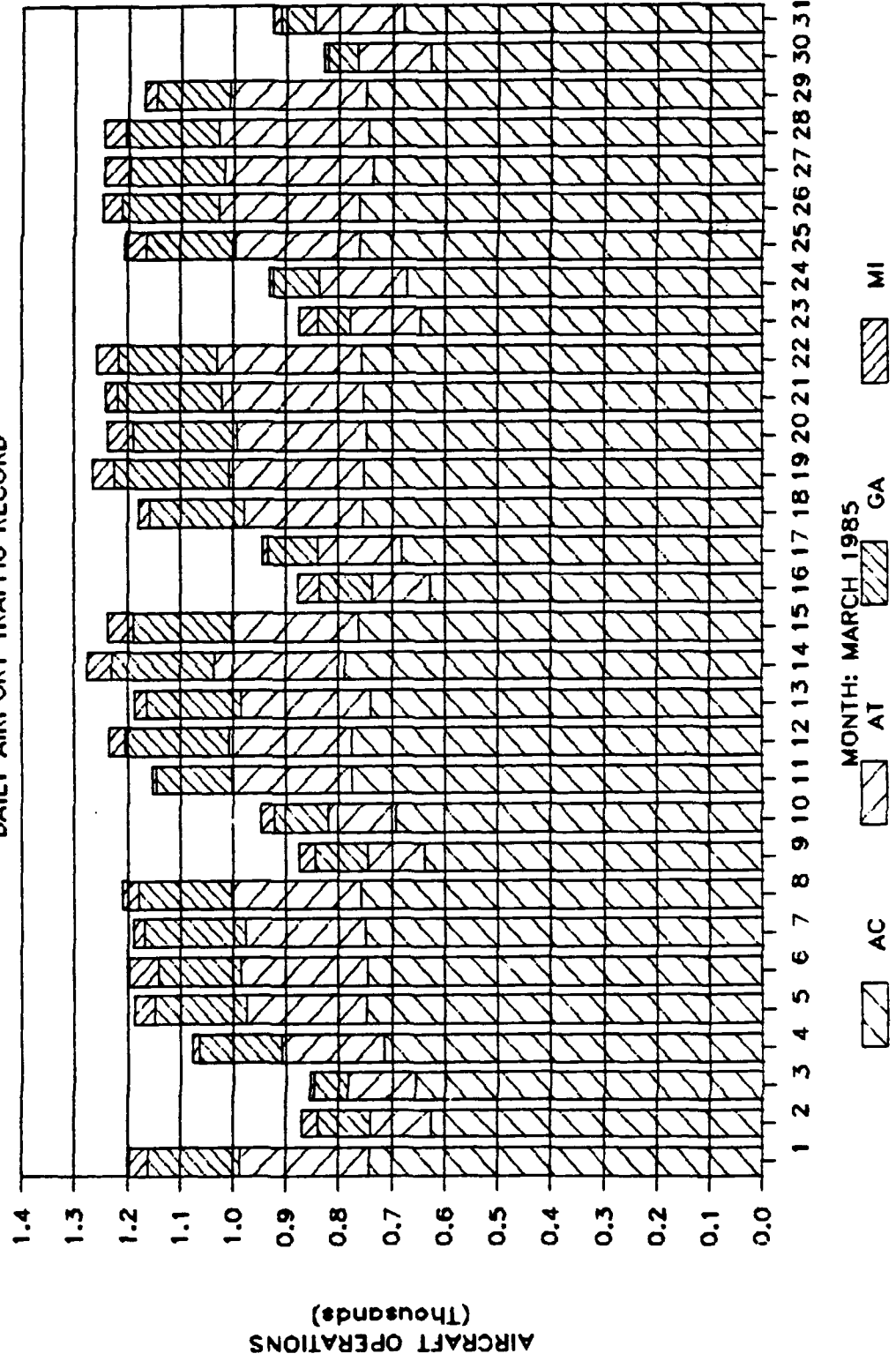
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Source: St. Louis Airport Tower Records, 1984-1986

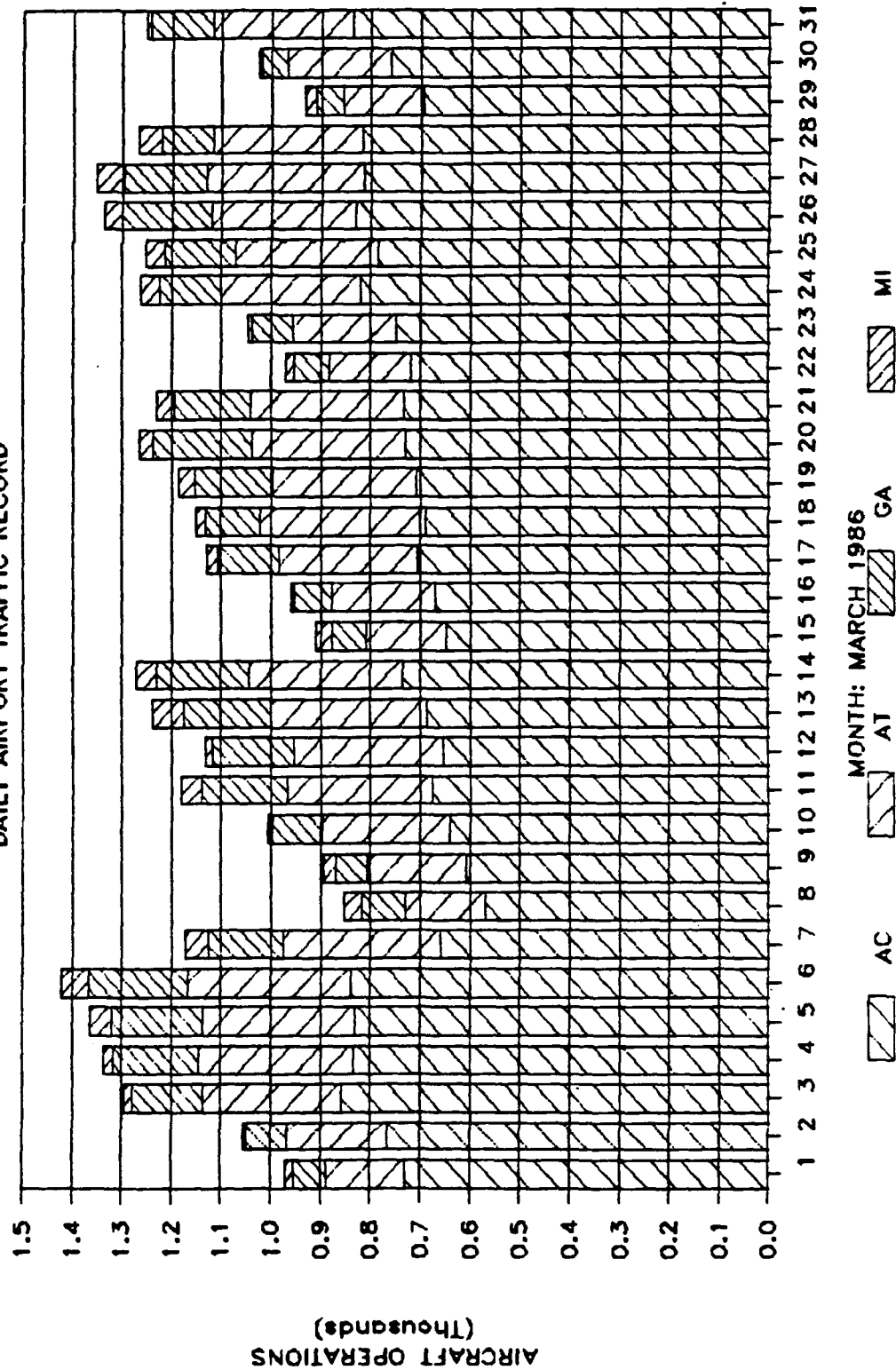
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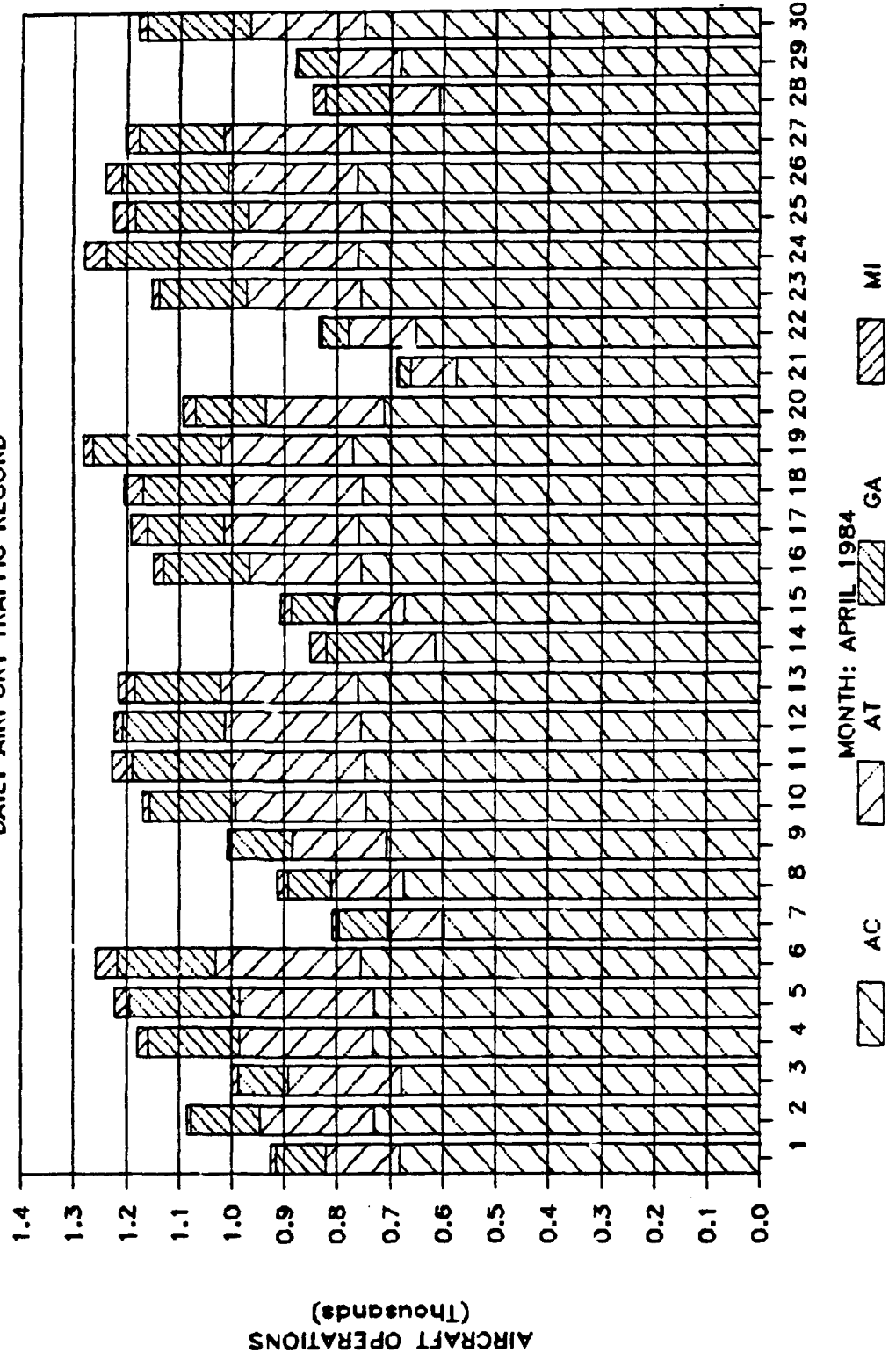
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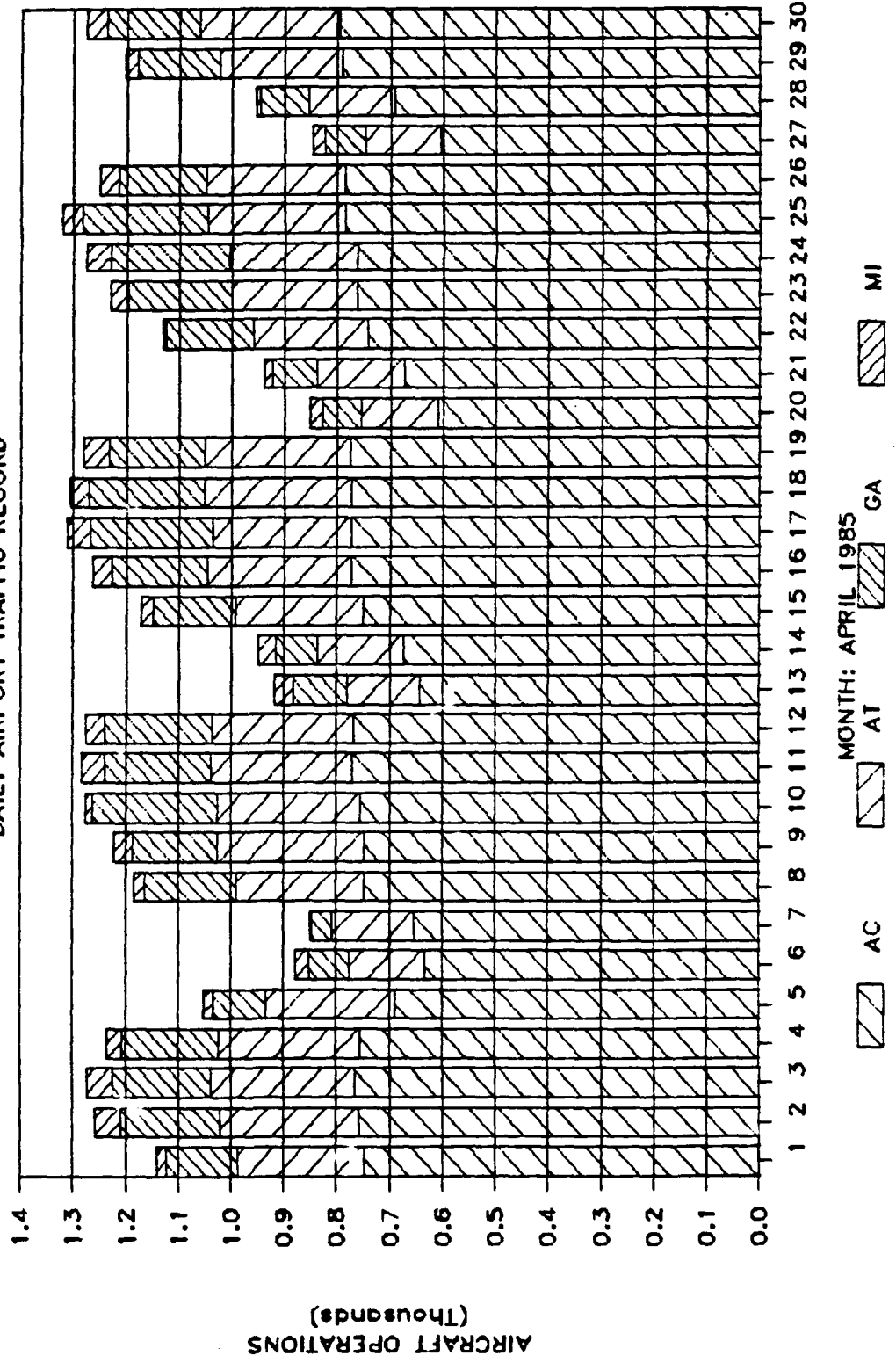
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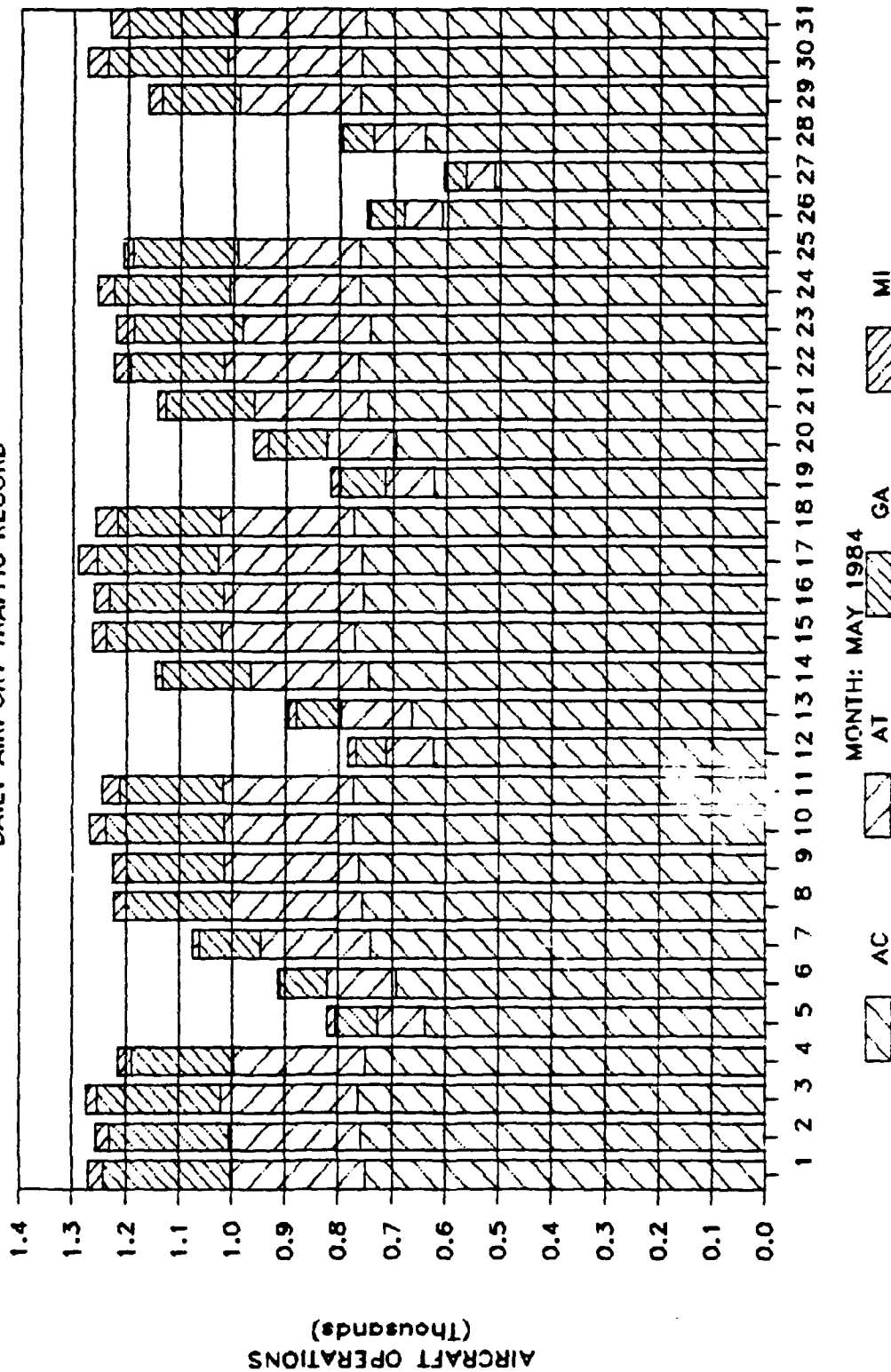
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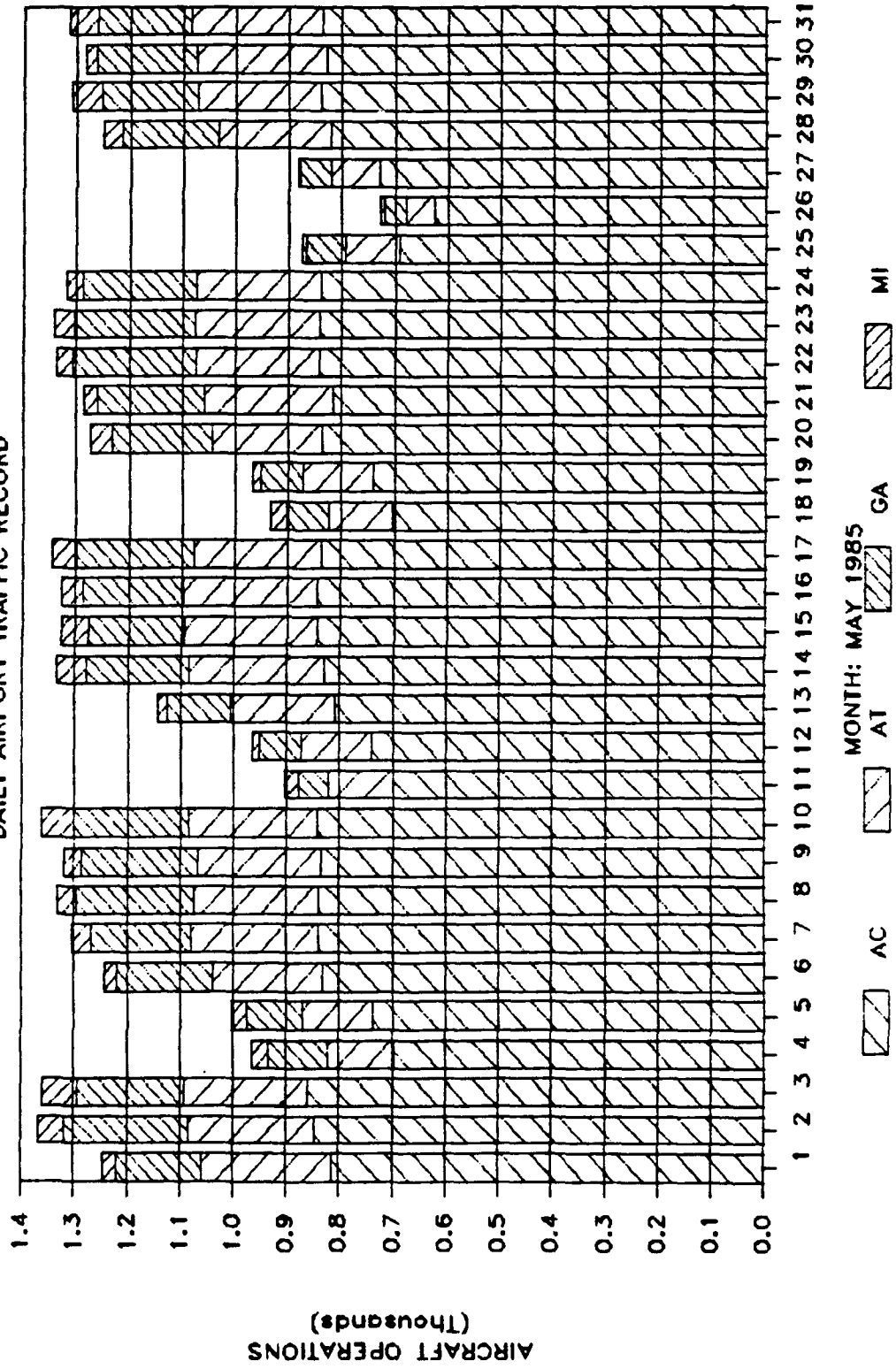
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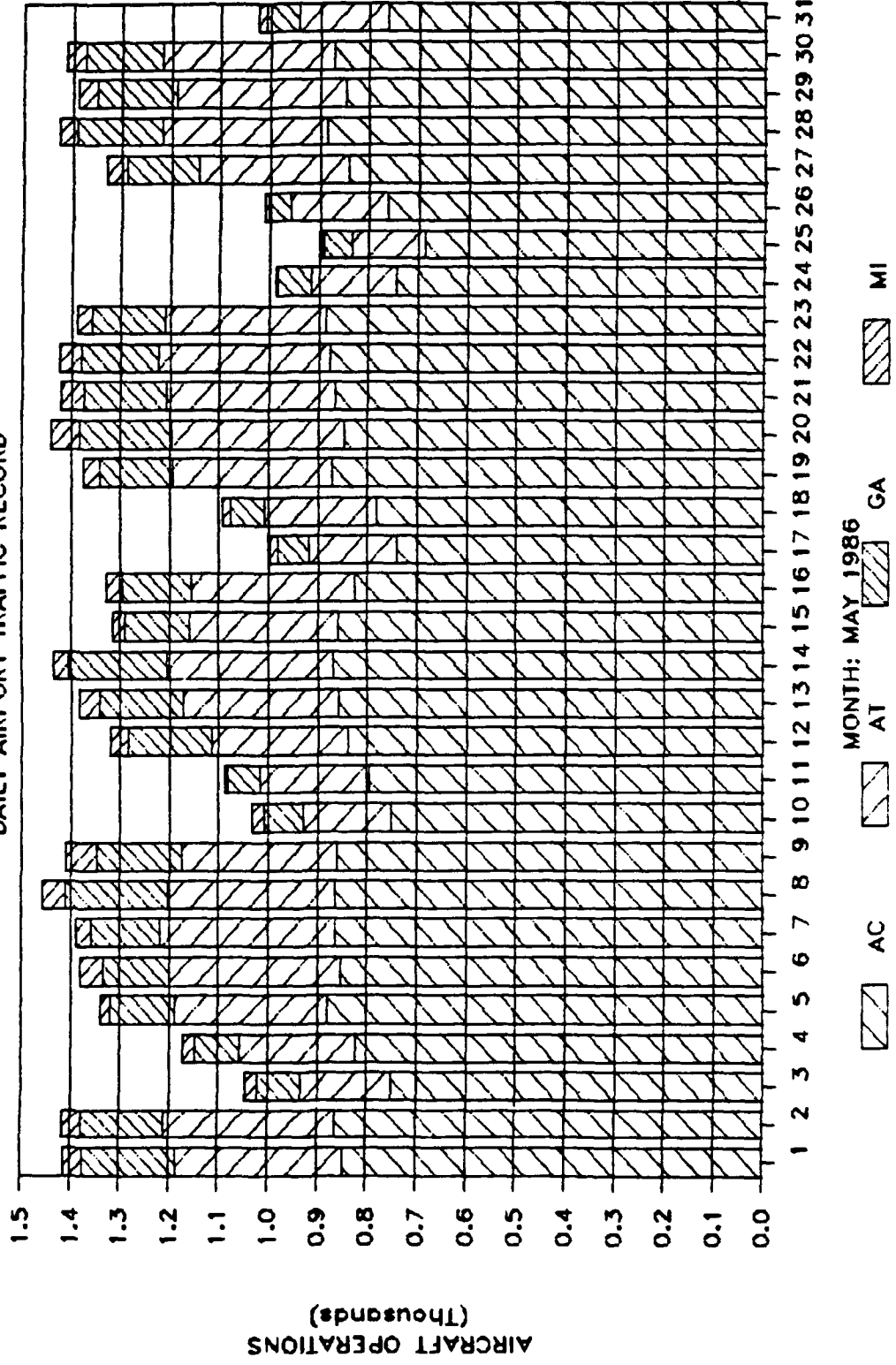
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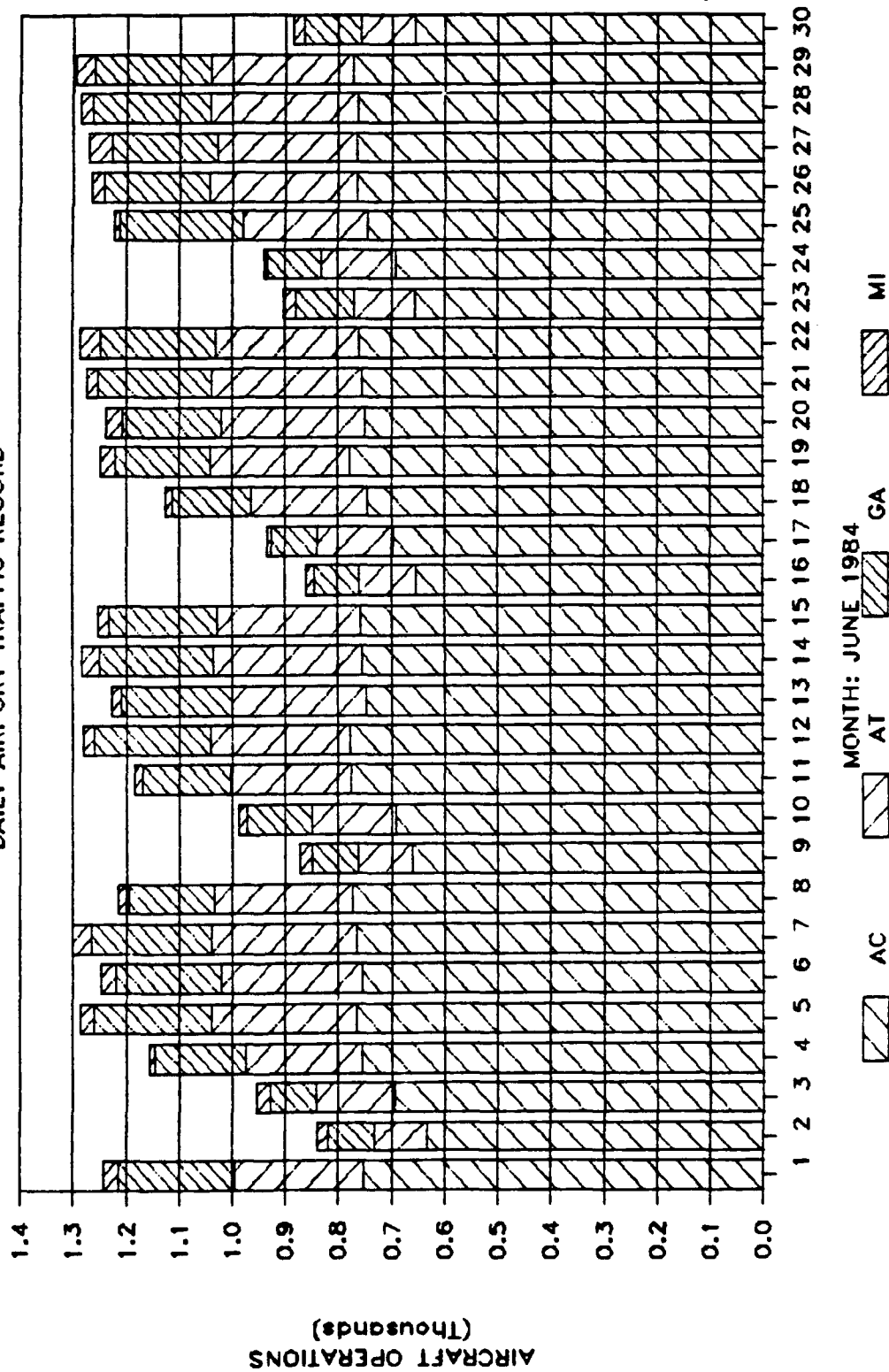
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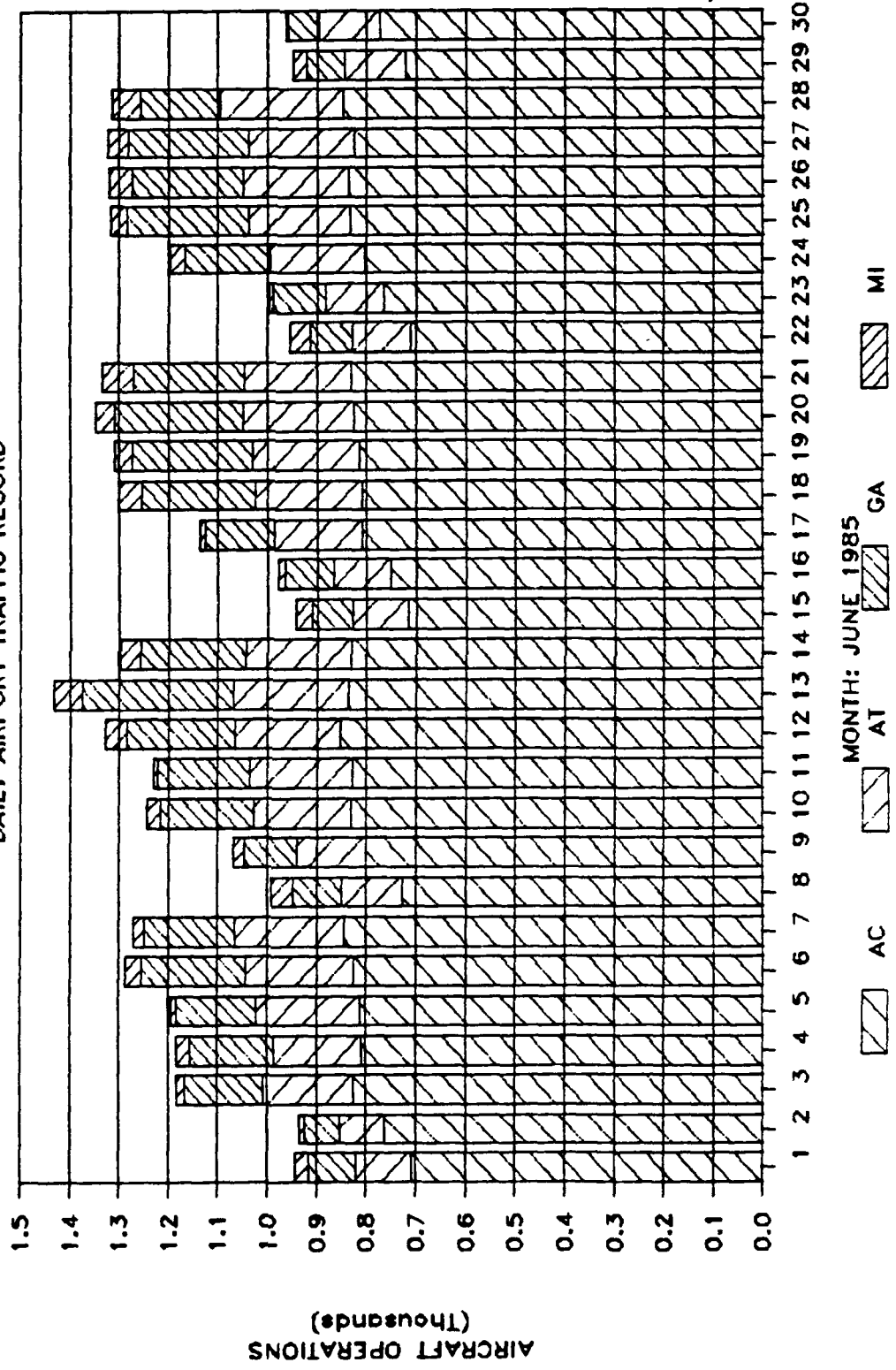
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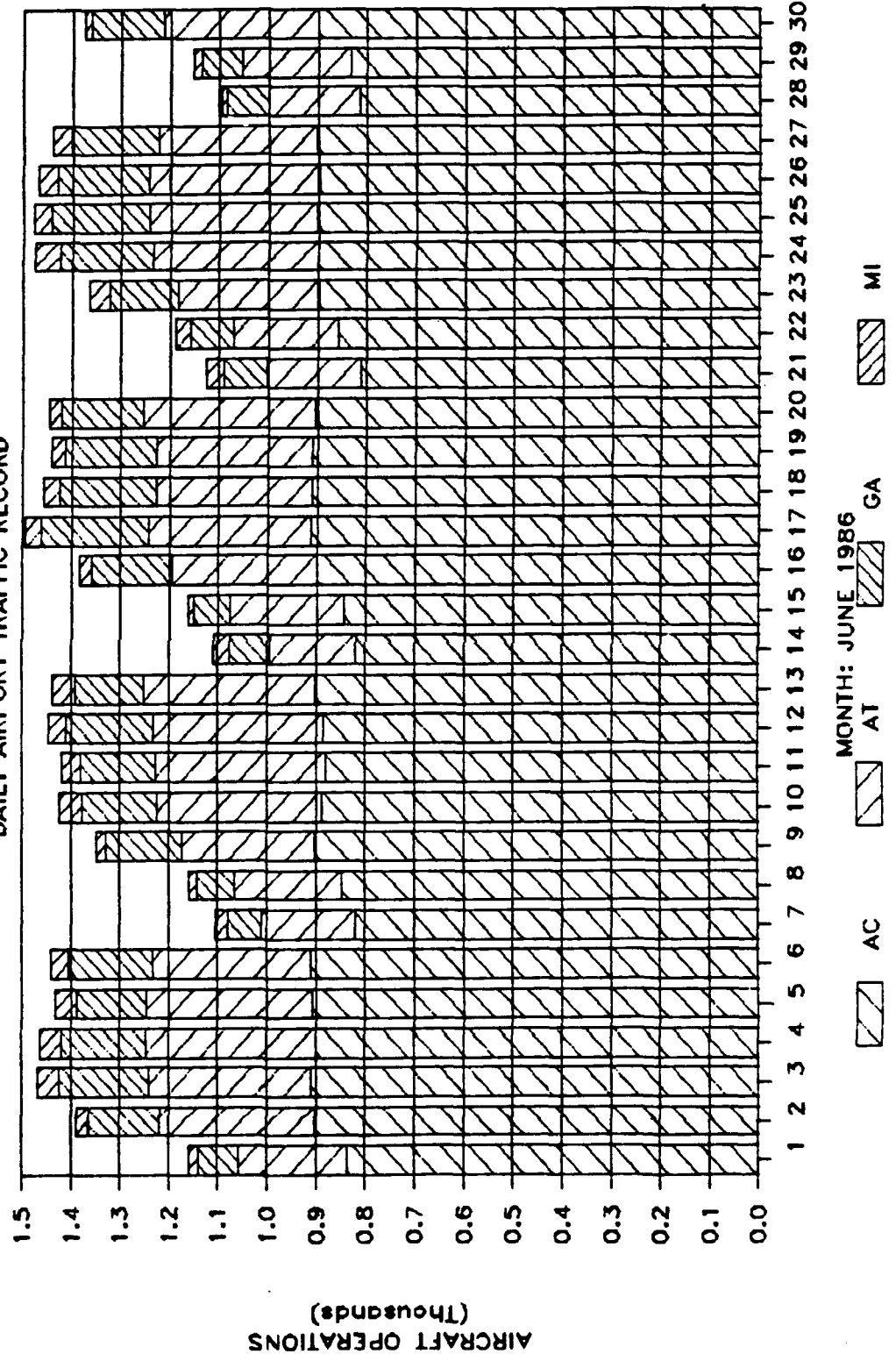
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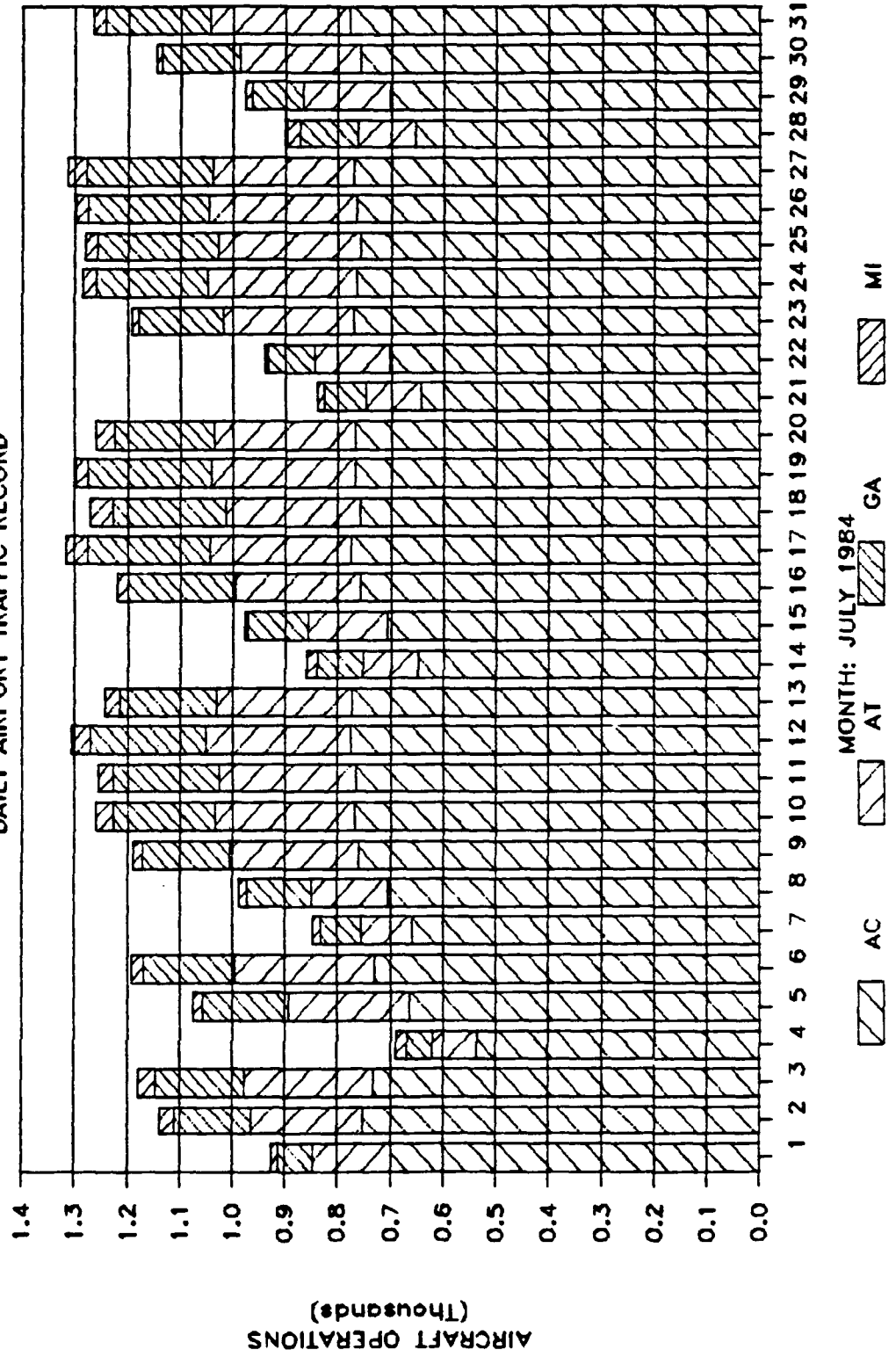
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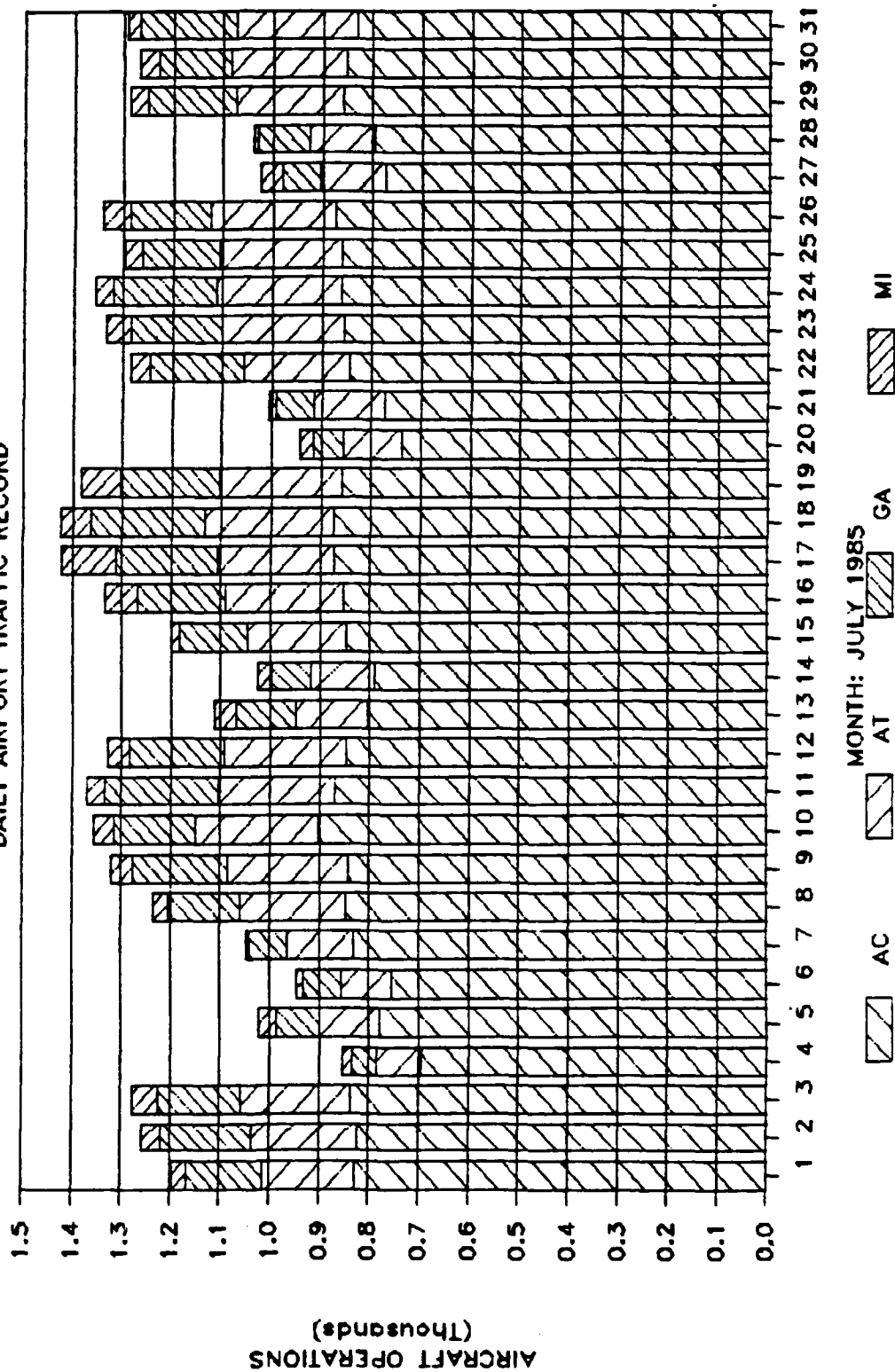
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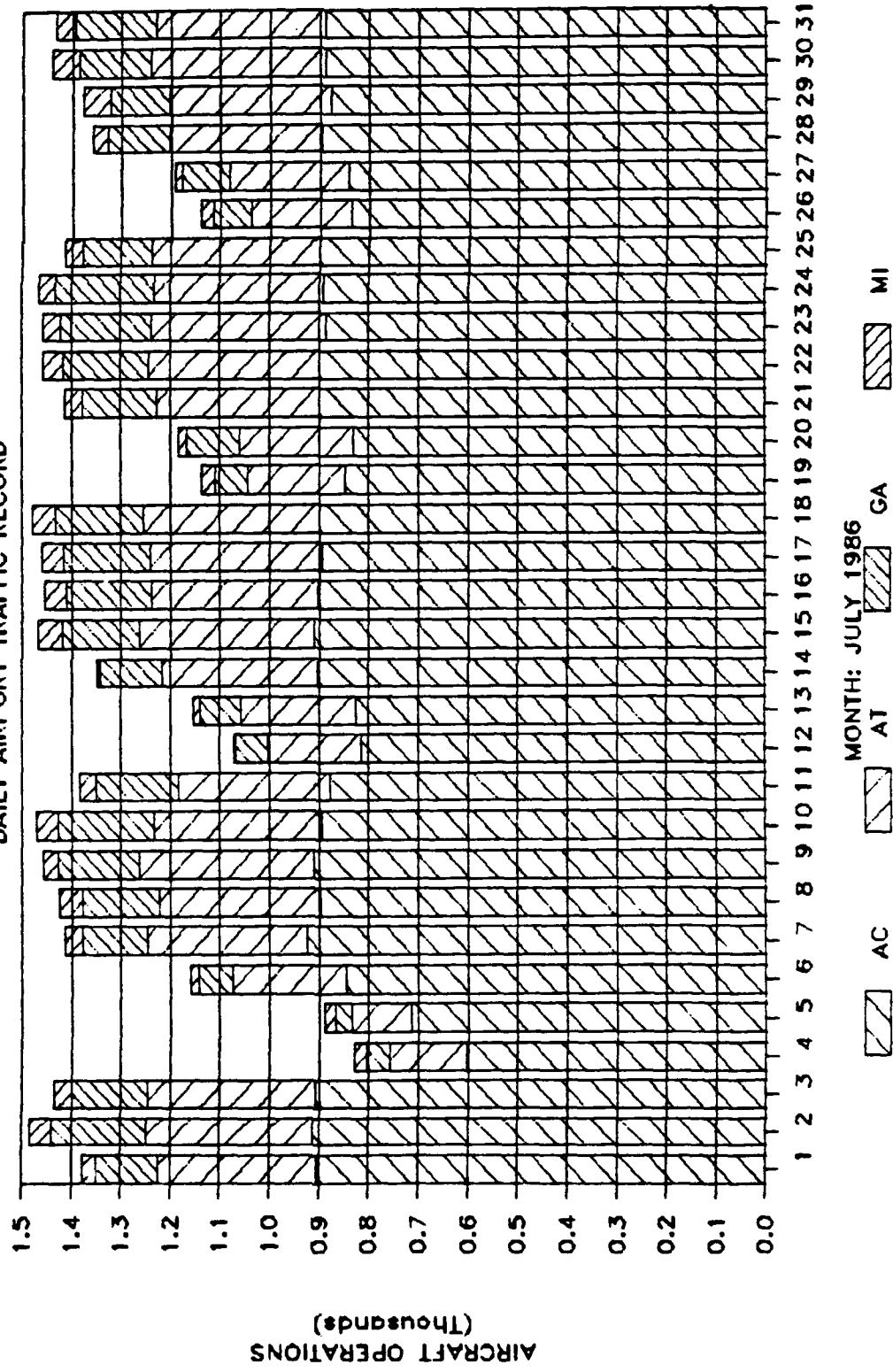
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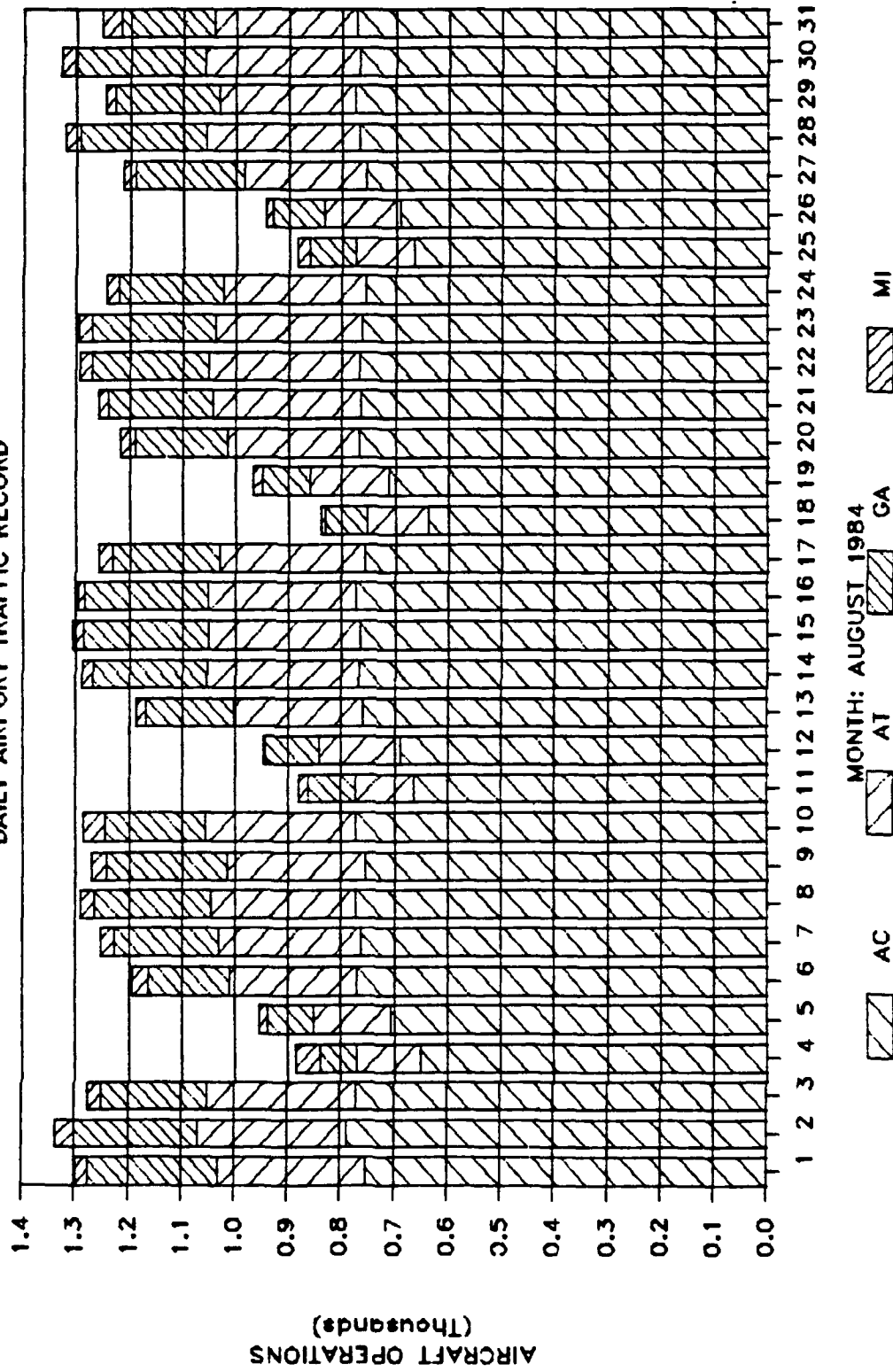
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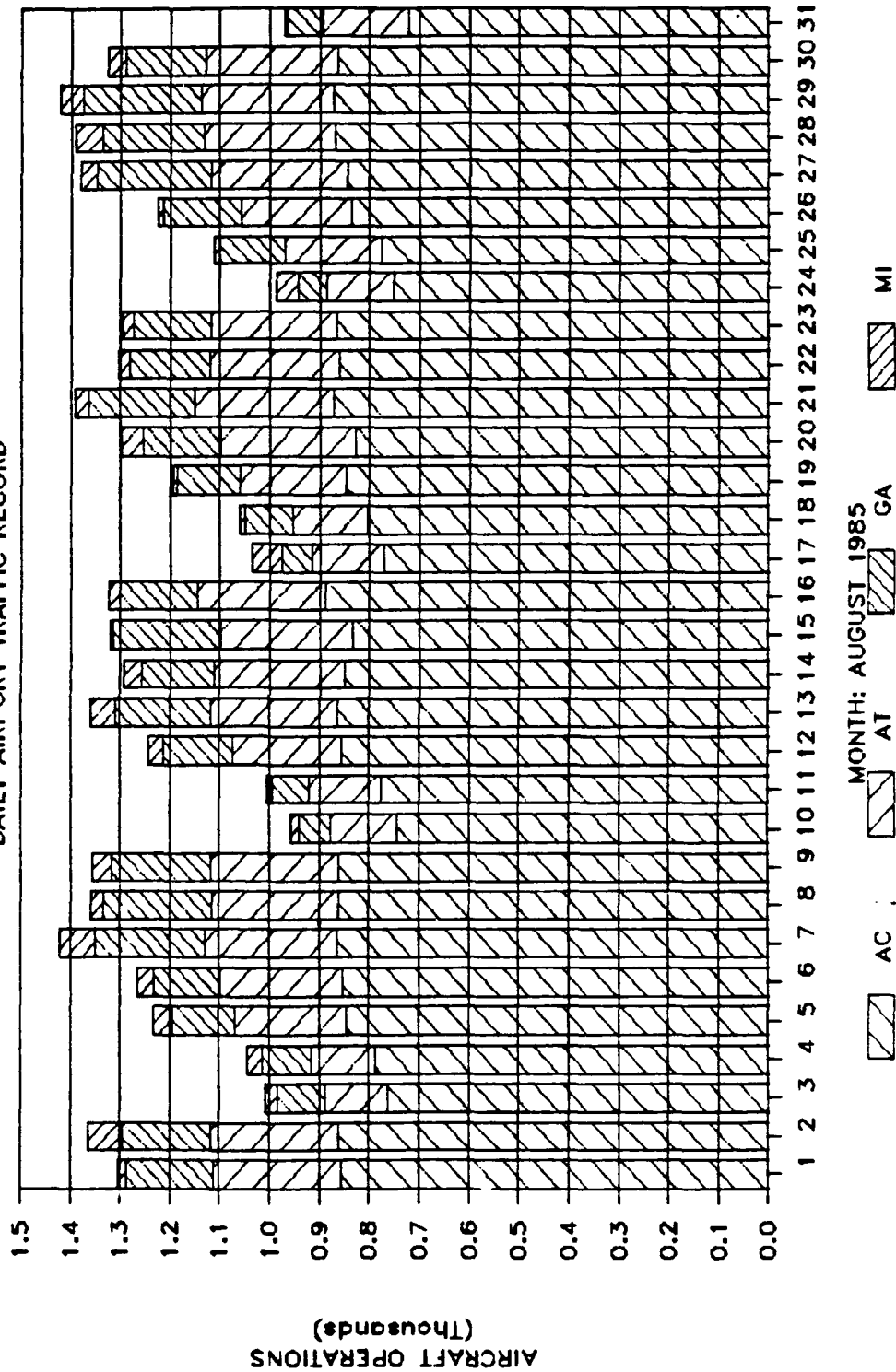
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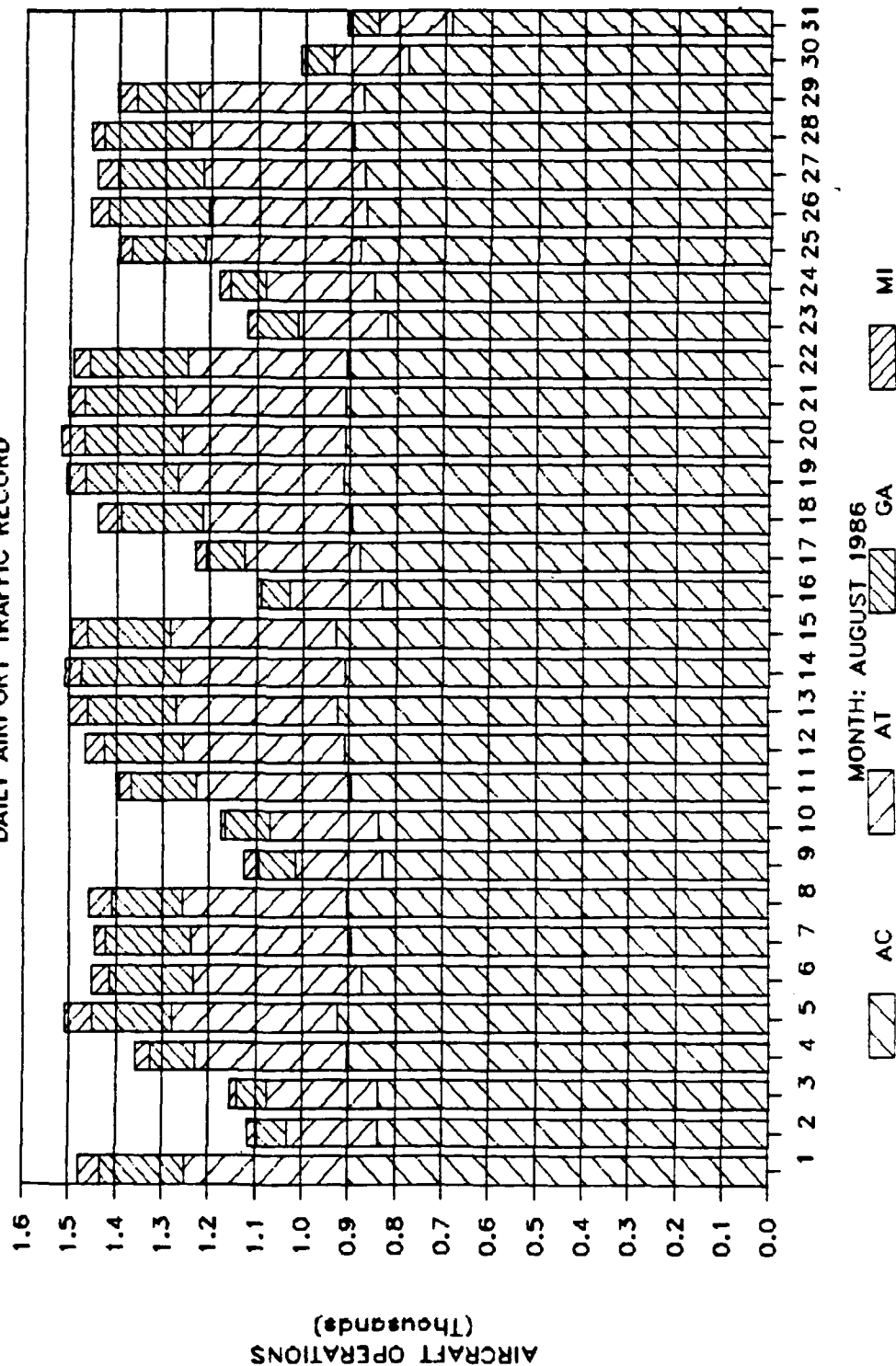
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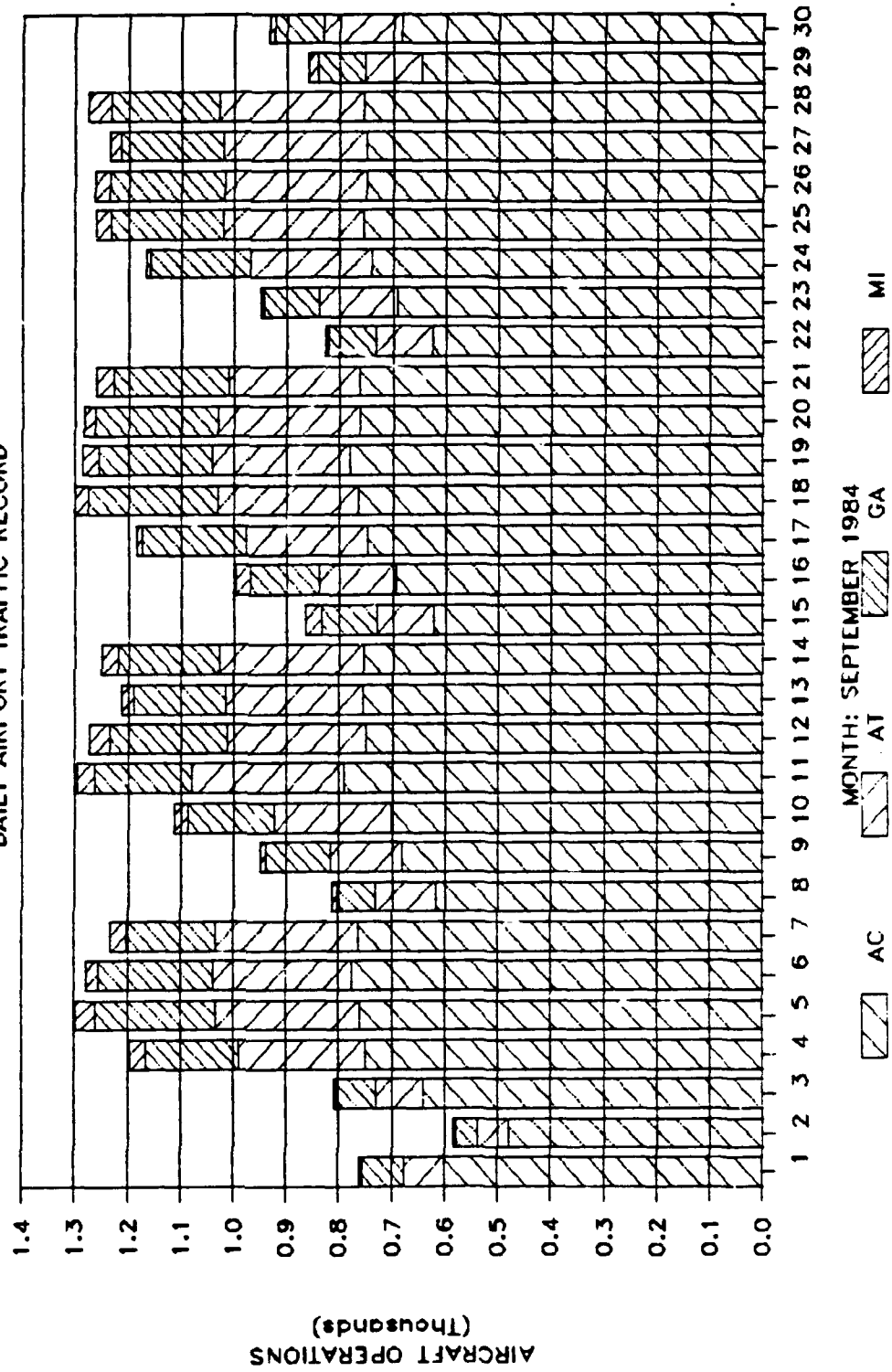
DAILY AIRPORT TRAFFIC RECORD



Source: St. Louis Airport Tower Records, 1984-1986

LAMBERT INTERNATIONAL AIRPORT

DAILY AIRPORT TRAFFIC RECORD



LAMBERT INTERNATIONAL AIRPORT

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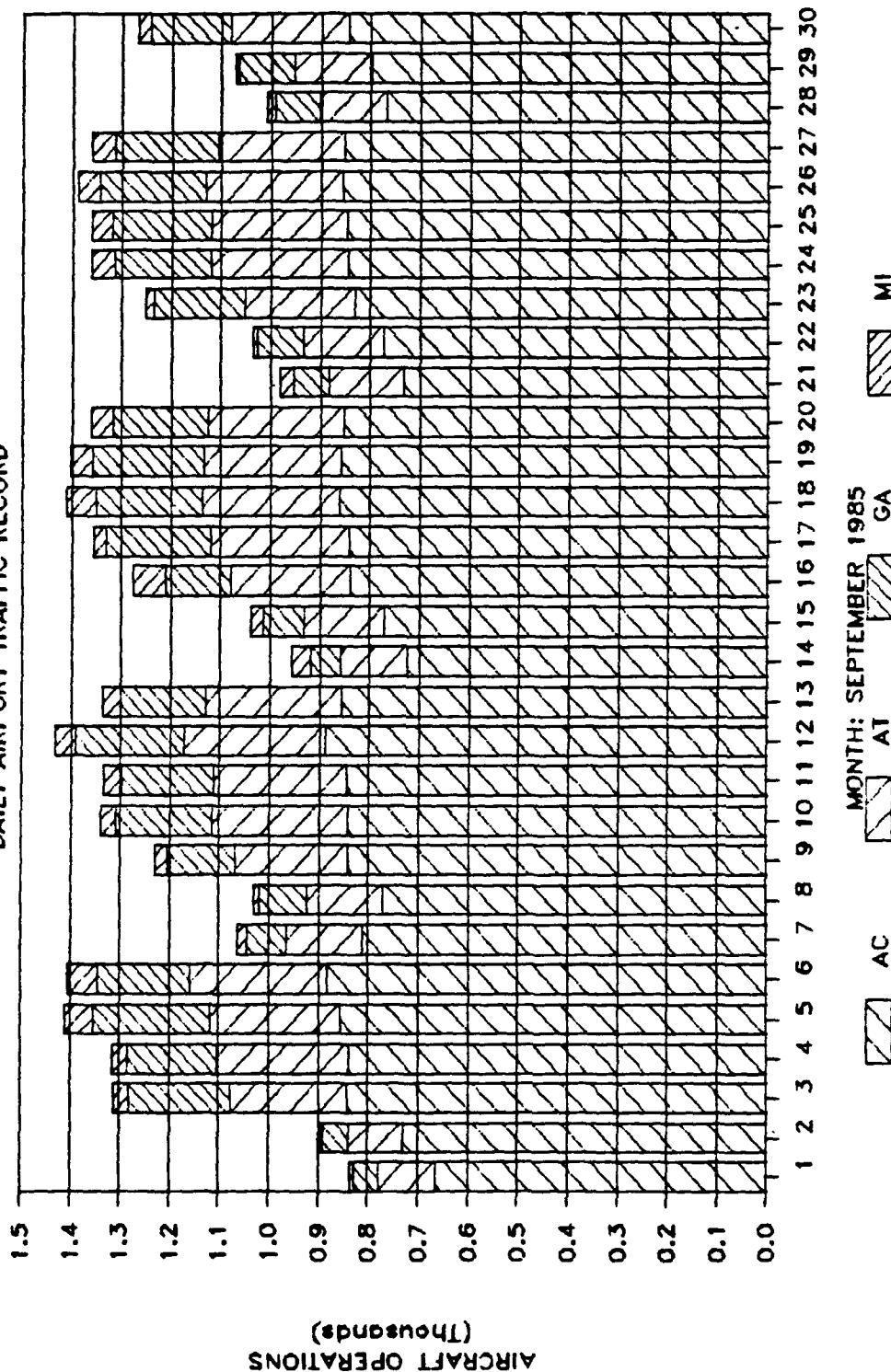


Exhibit B-26
TAMS
 3/16/87

Source: St. Louis Airport Tower Records, 1984-1986

LAMBERT INTERNATIONAL AIRPORT

DAILY AIRPORT TRAFFIC RECORD

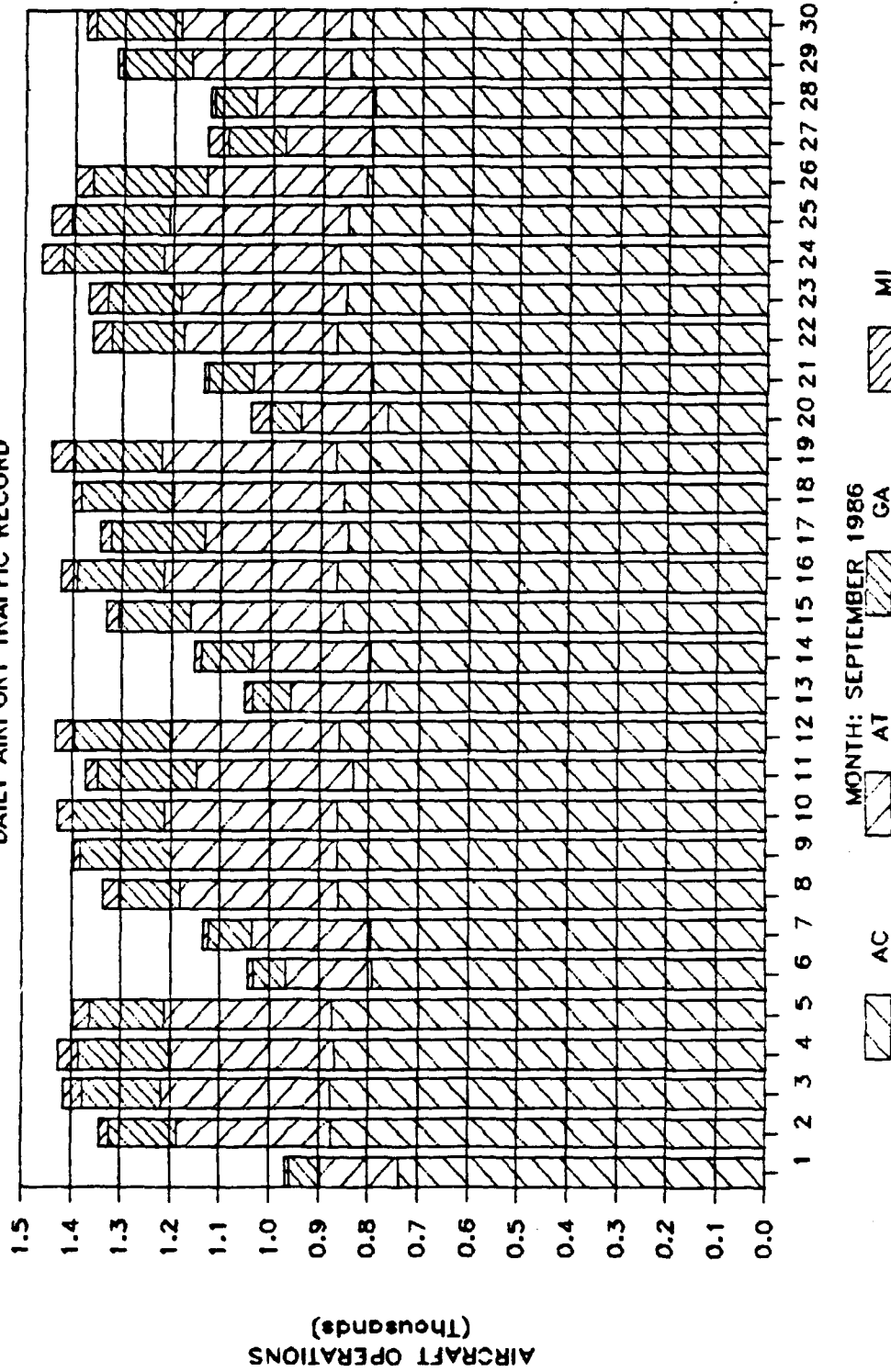


Exhibit B-27
TAMS
 3/16/87

Source: St. Louis Airport Tower Records, 1984-1986

LAMBERT INTERNATIONAL AIRPORT

DAILY AIRPORT TRAFFIC RECORD

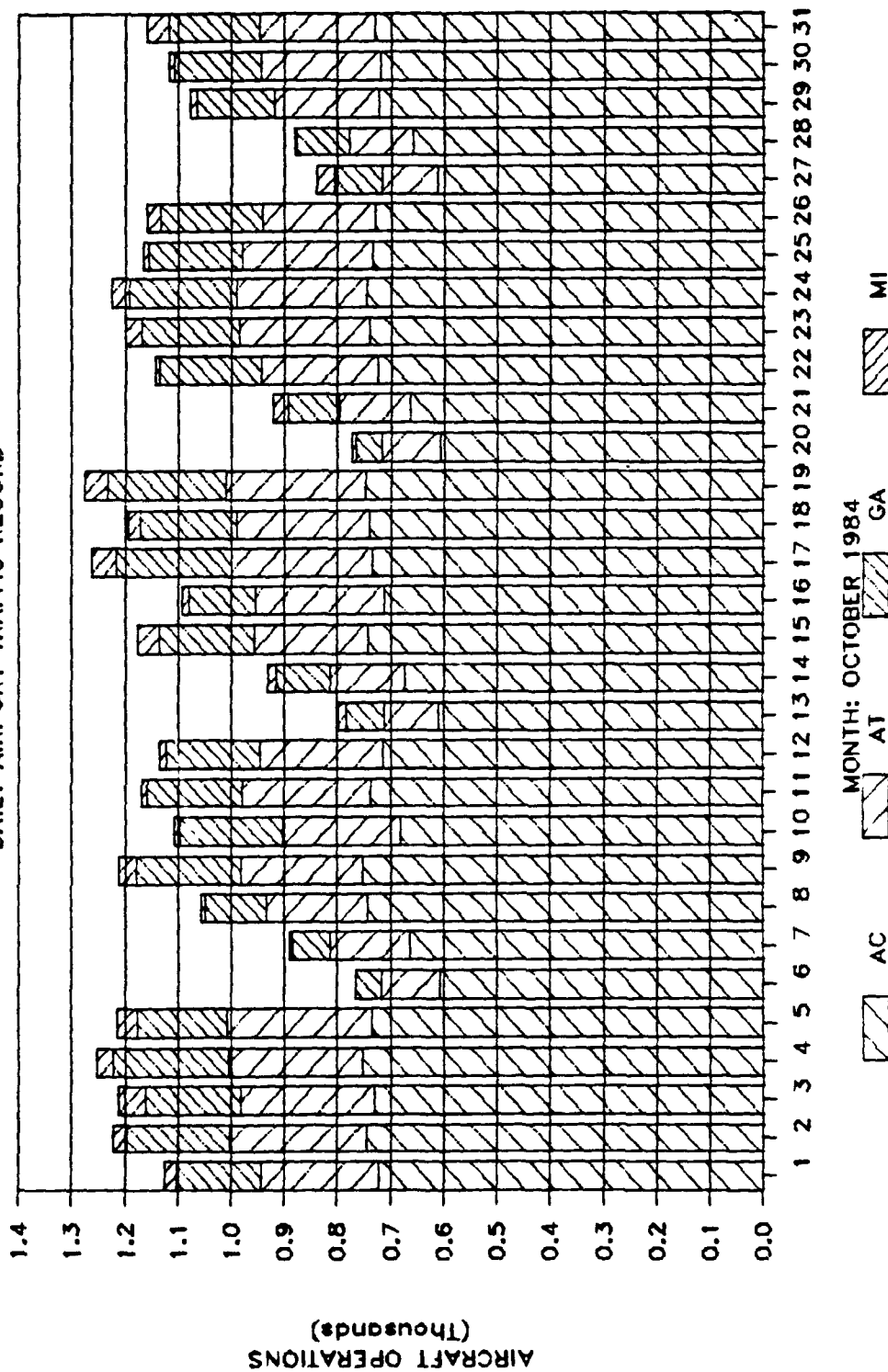
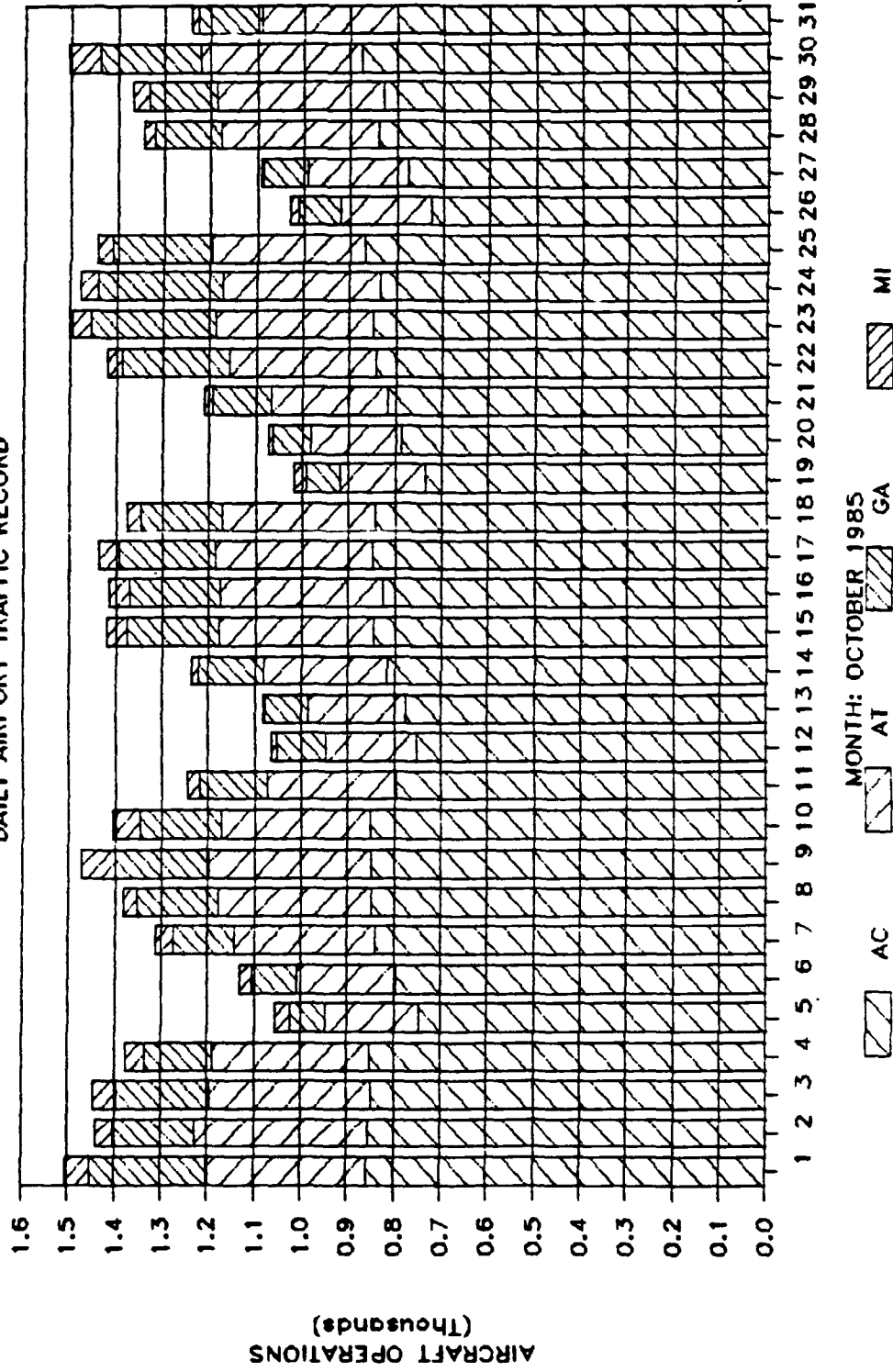


Exhibit B-28
TAMS
3/16/87

Source: St. Louis Airport Tower Records, 1984-1986

LAMBERT INTERNATIONAL AIRPORT

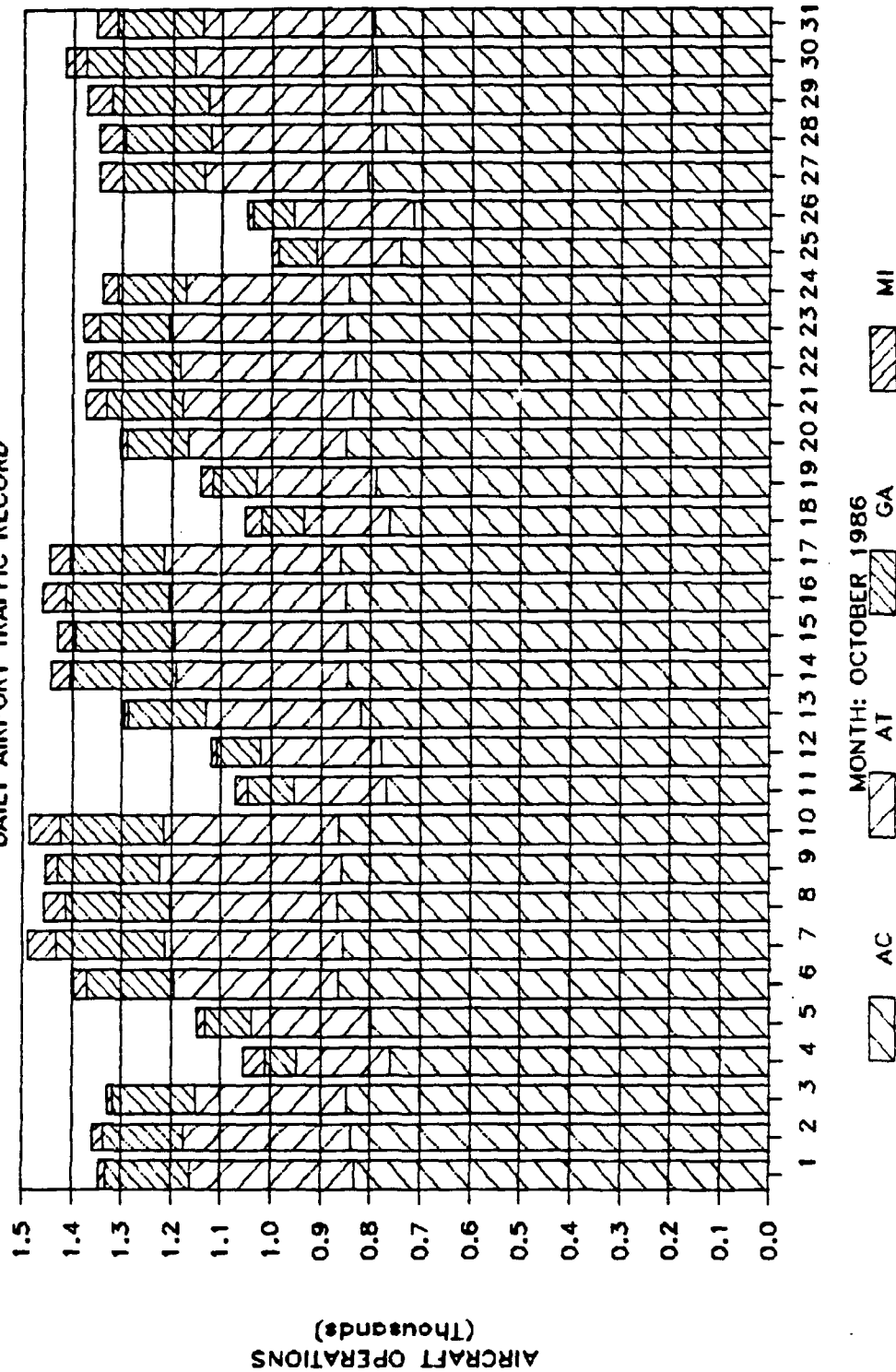
DAILY AIRPORT TRAFFIC RECORD



Source: St. Louis Airport Tower Records, 1984-1986

LAMBERT INTERNATIONAL AIRPORT

DAILY AIRPORT TRAFFIC RECORD



Source: St. Louis Airport Tower Records, 1984-1986

LAMBERT INTERNATIONAL AIRPORT

DAILY AIRPORT TRAFFIC RECORD

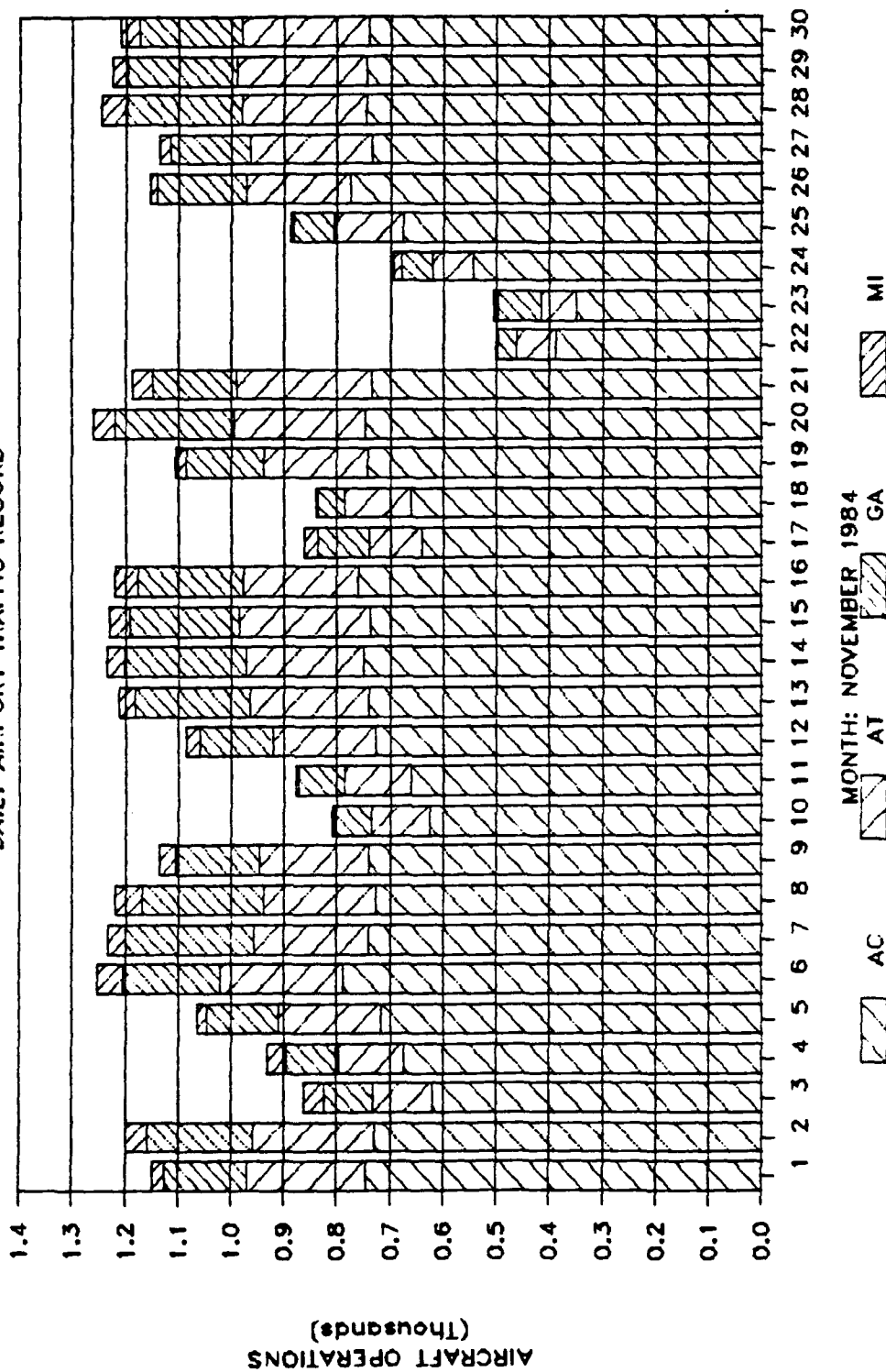
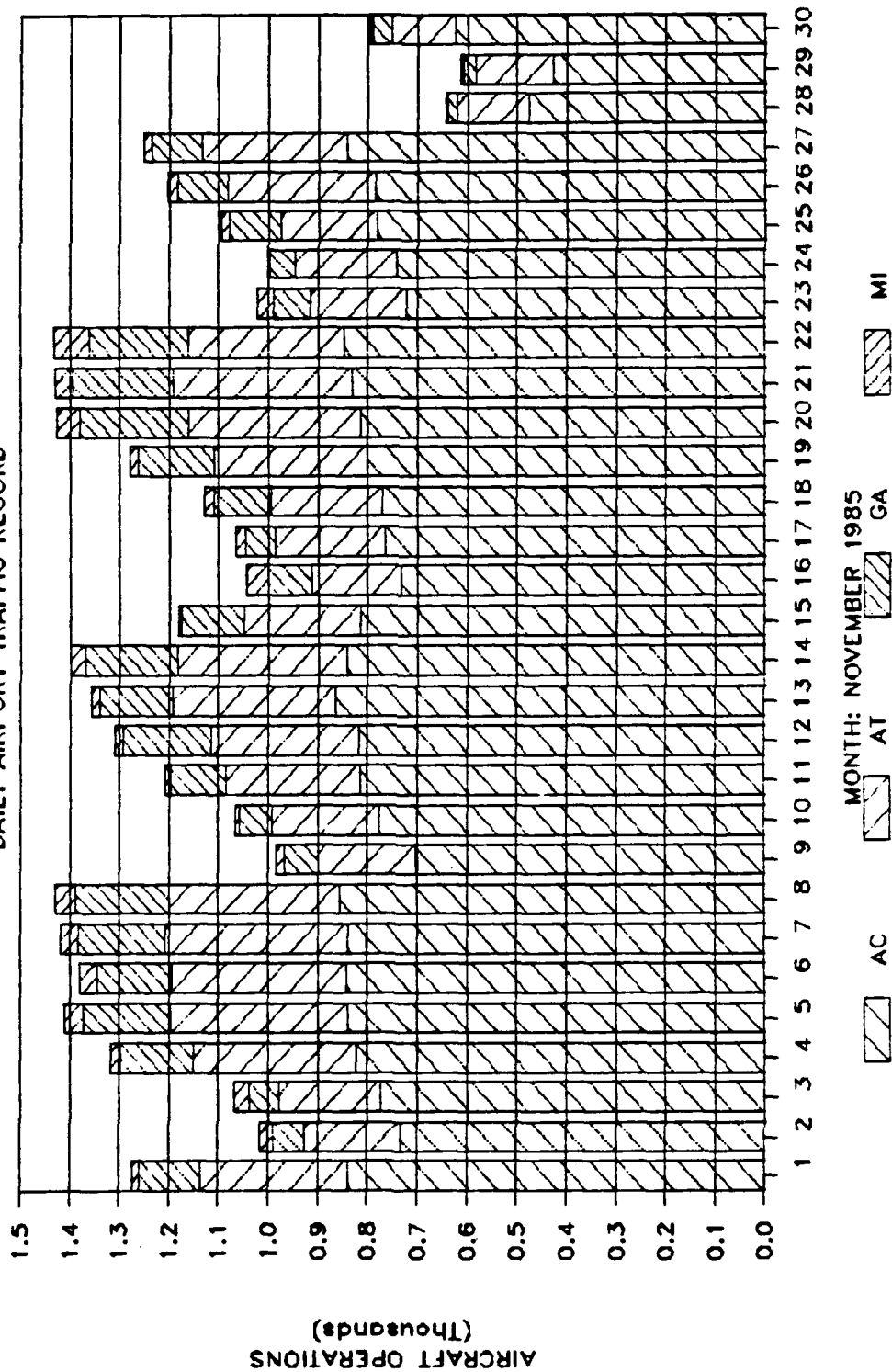


Exhibit B-31
TAMS
3/16/87

Source: St. Louis Airport Tower Records, 1984-1986

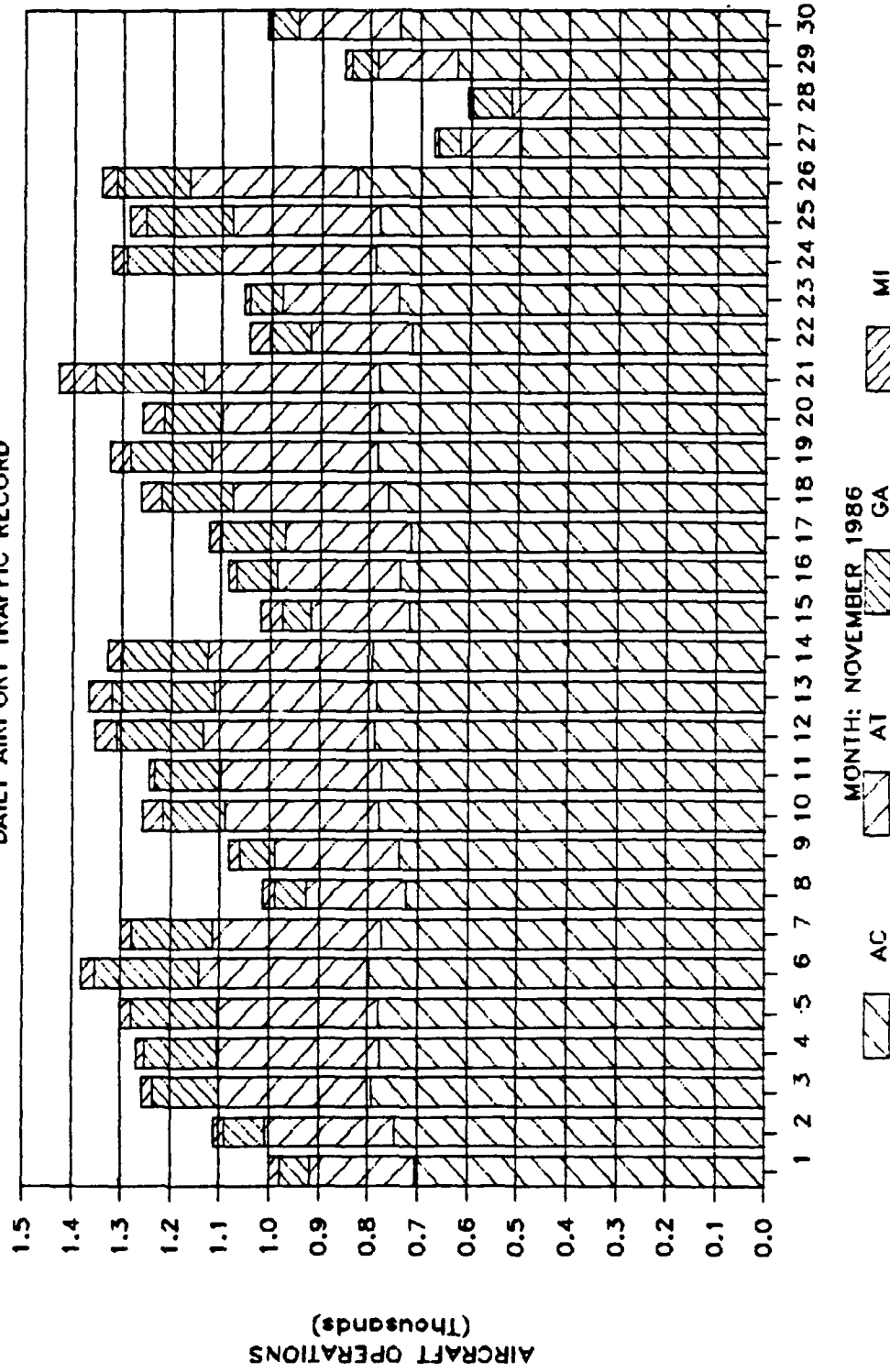
LAMBERT INTERNATIONAL AIRPORT

DAILY AIRPORT TRAFFIC RECORD



LAMBERT INTERNATIONAL AIRPORT

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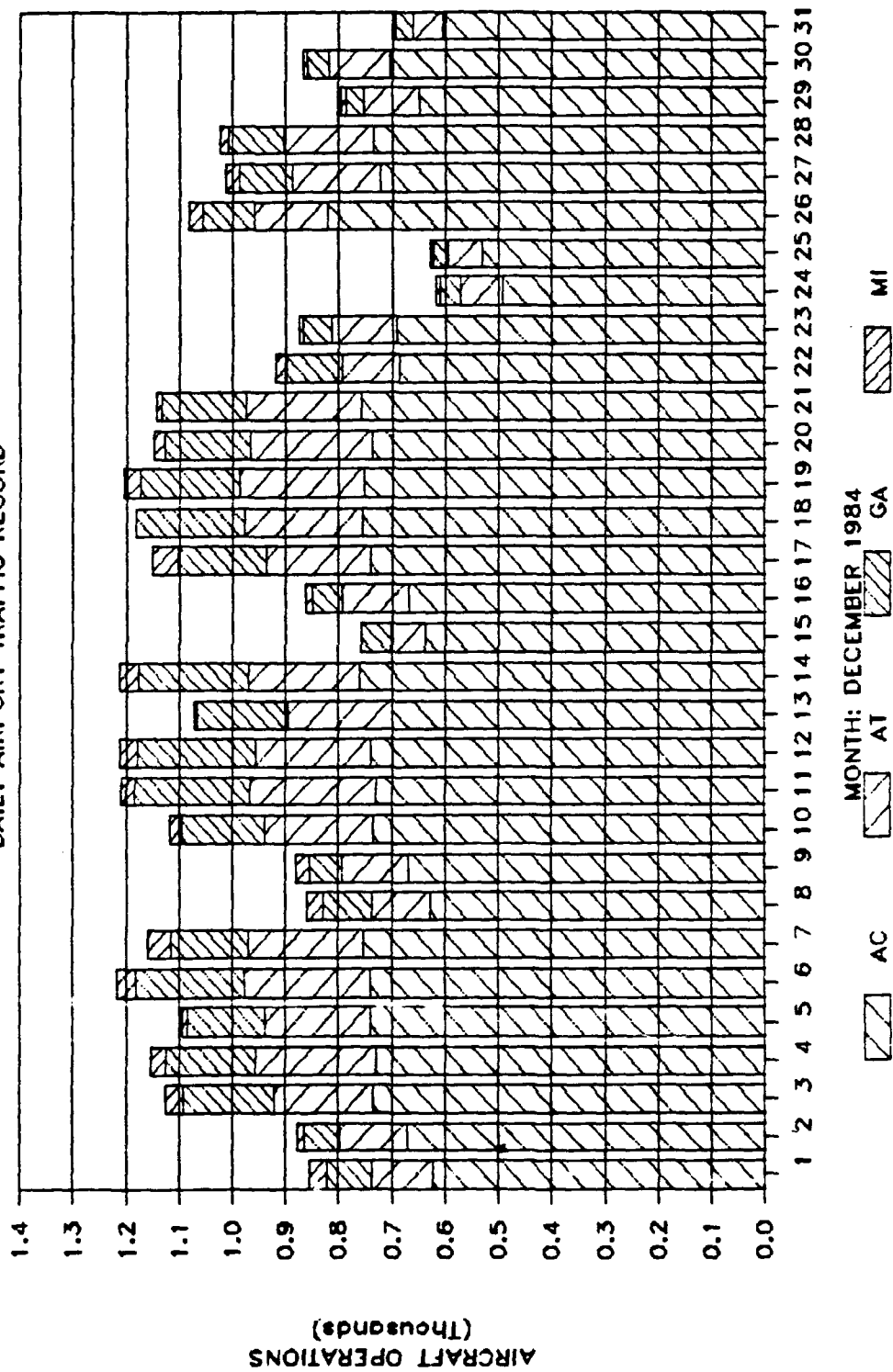


Exhibit B-34
TAMS
3/16/87

Source: St. Louis Airport Tower Records, 1984-1986

LAMBERT INTERNATIONAL AIRPORT

DAILY AIRPORT TRAFFIC RECORD

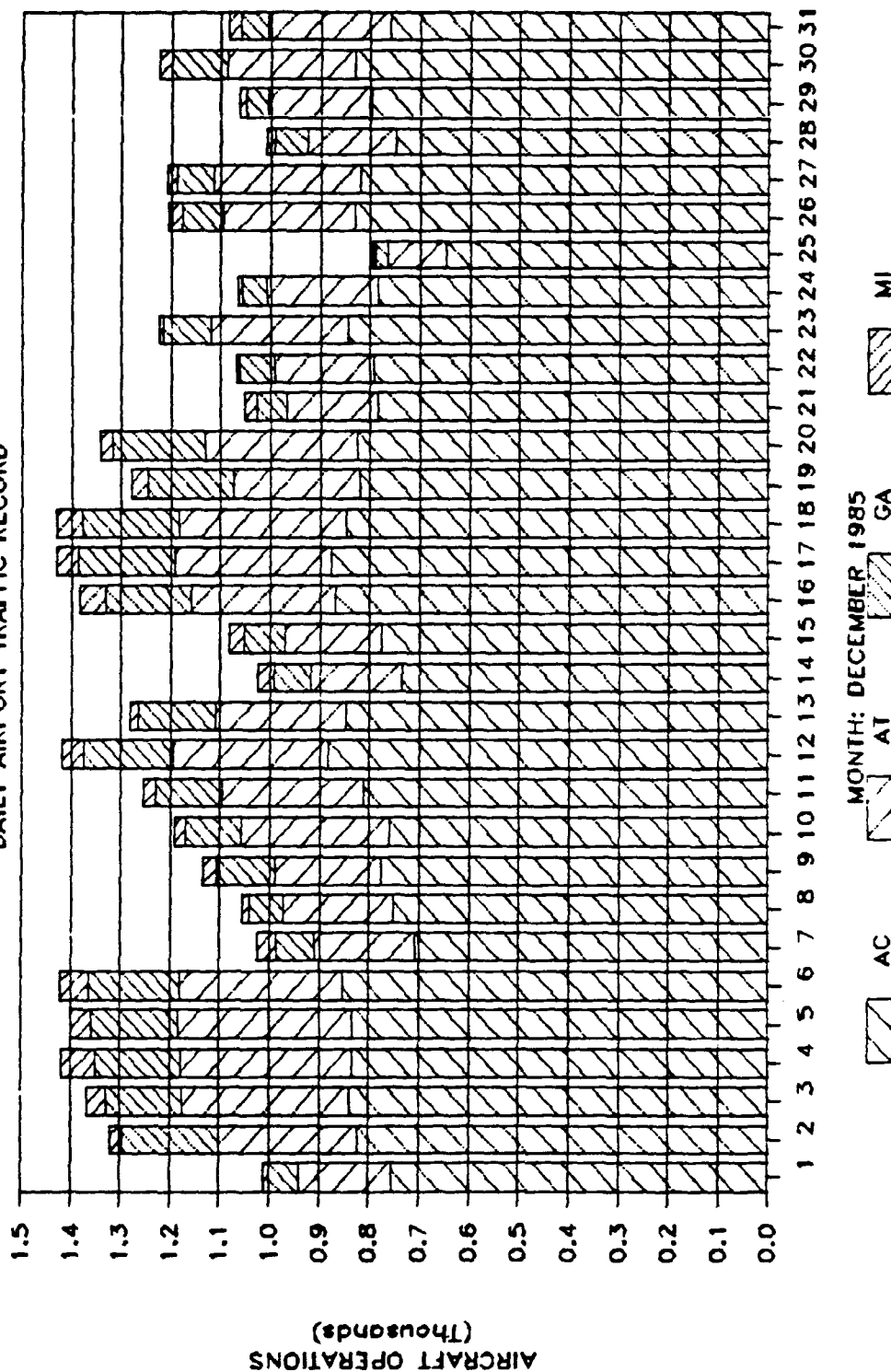


Exhibit B-35
TAMS
3/16/87

Source: St. Louis Airport Tower Records, 1984-1986

LAMBERT INTERNATIONAL AIRPORT

DAILY AIRPORT TRAFFIC RECORD

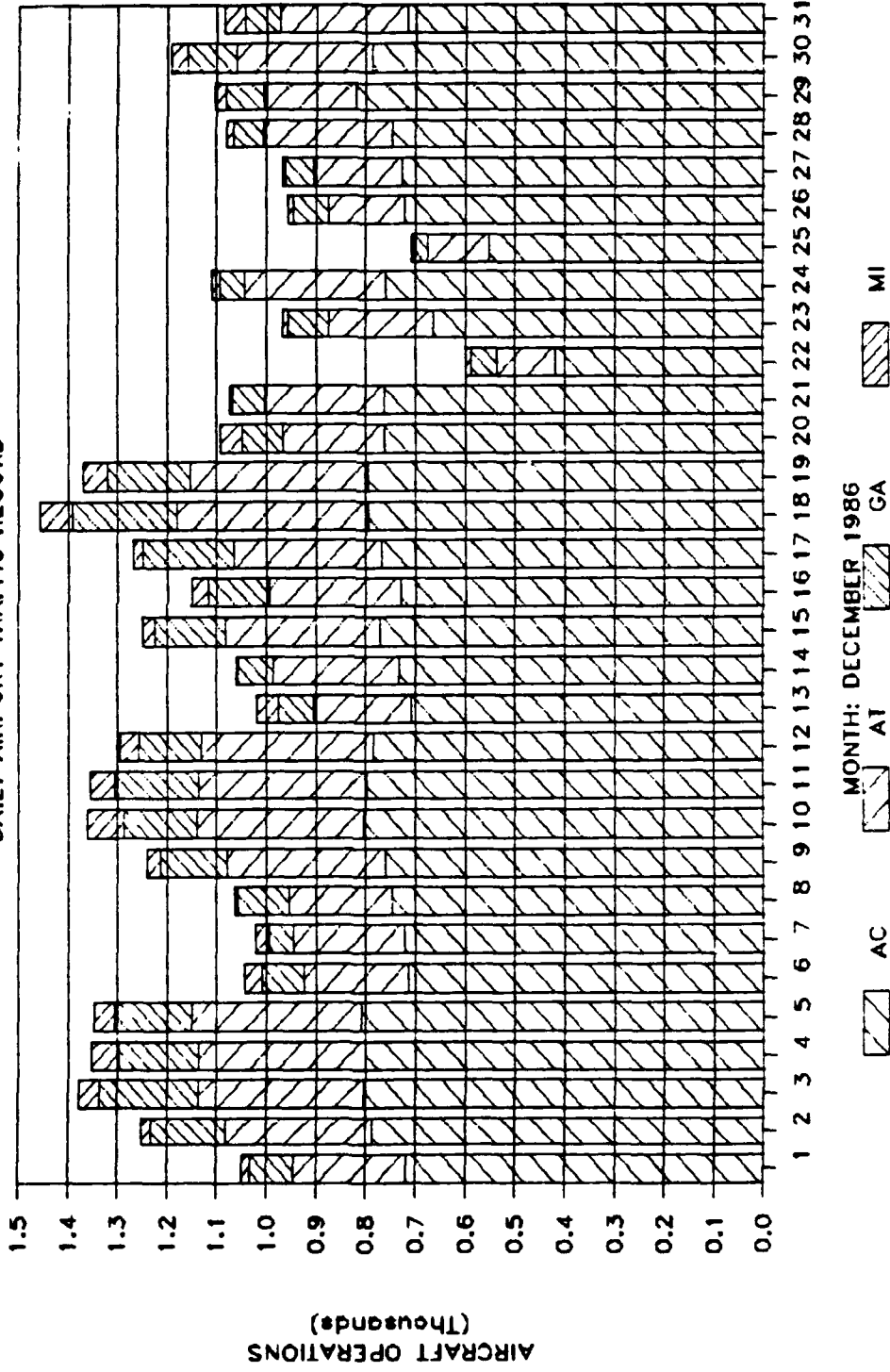
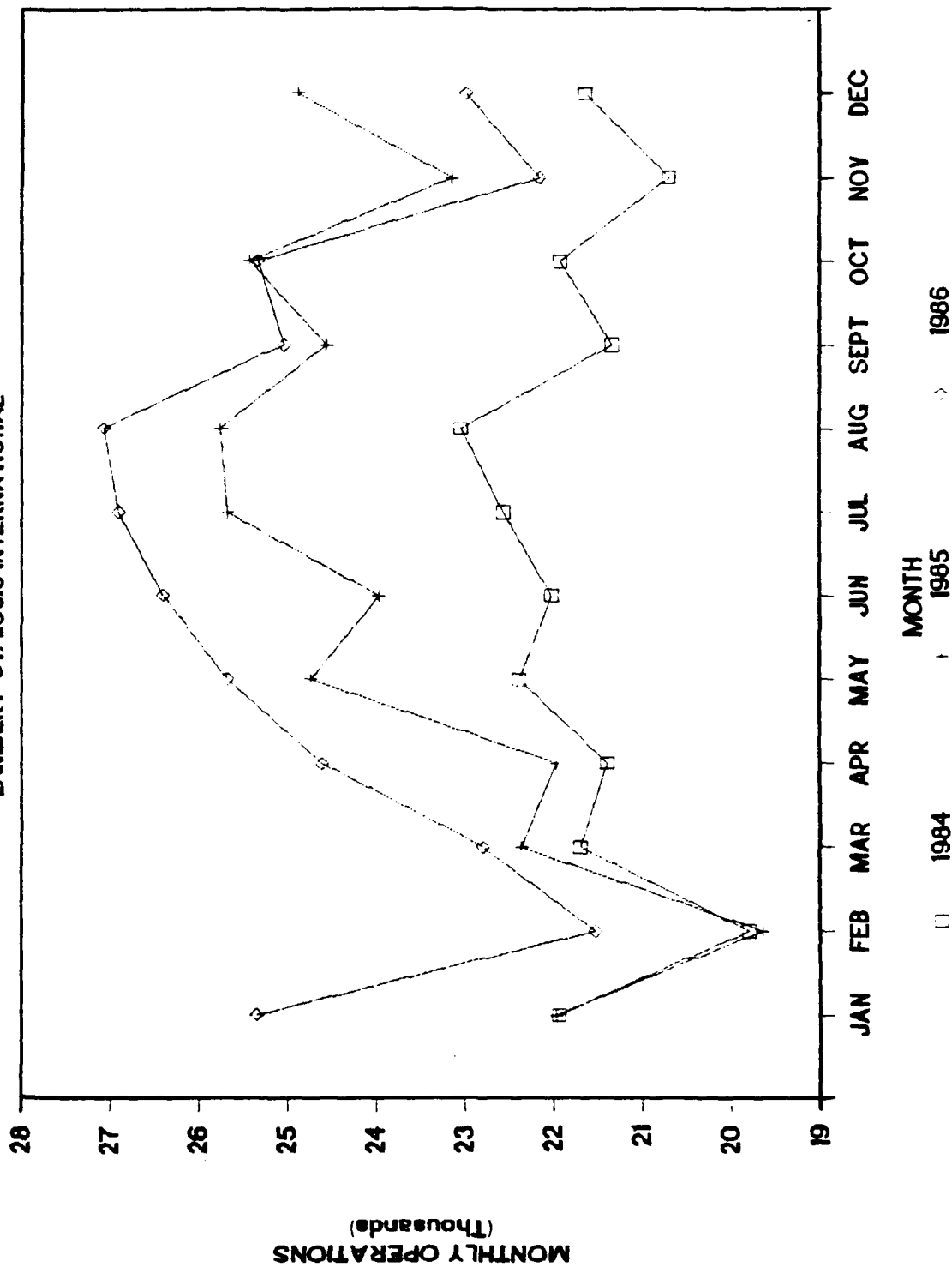


Exhibit B-36
TAMS
3/16/87

Source: St. Louis Airport Tower Records, 1984-1986

AC MONTHLY OPERATIONS

LAMBERT-ST. LOUIS INTERNATIONAL



Source: Lambert-St. Louis International Tower Records

AC & AT/COMM COMBINED MONTHLY OPS

LAMBERT-ST. LOUIS INTERNATIONAL

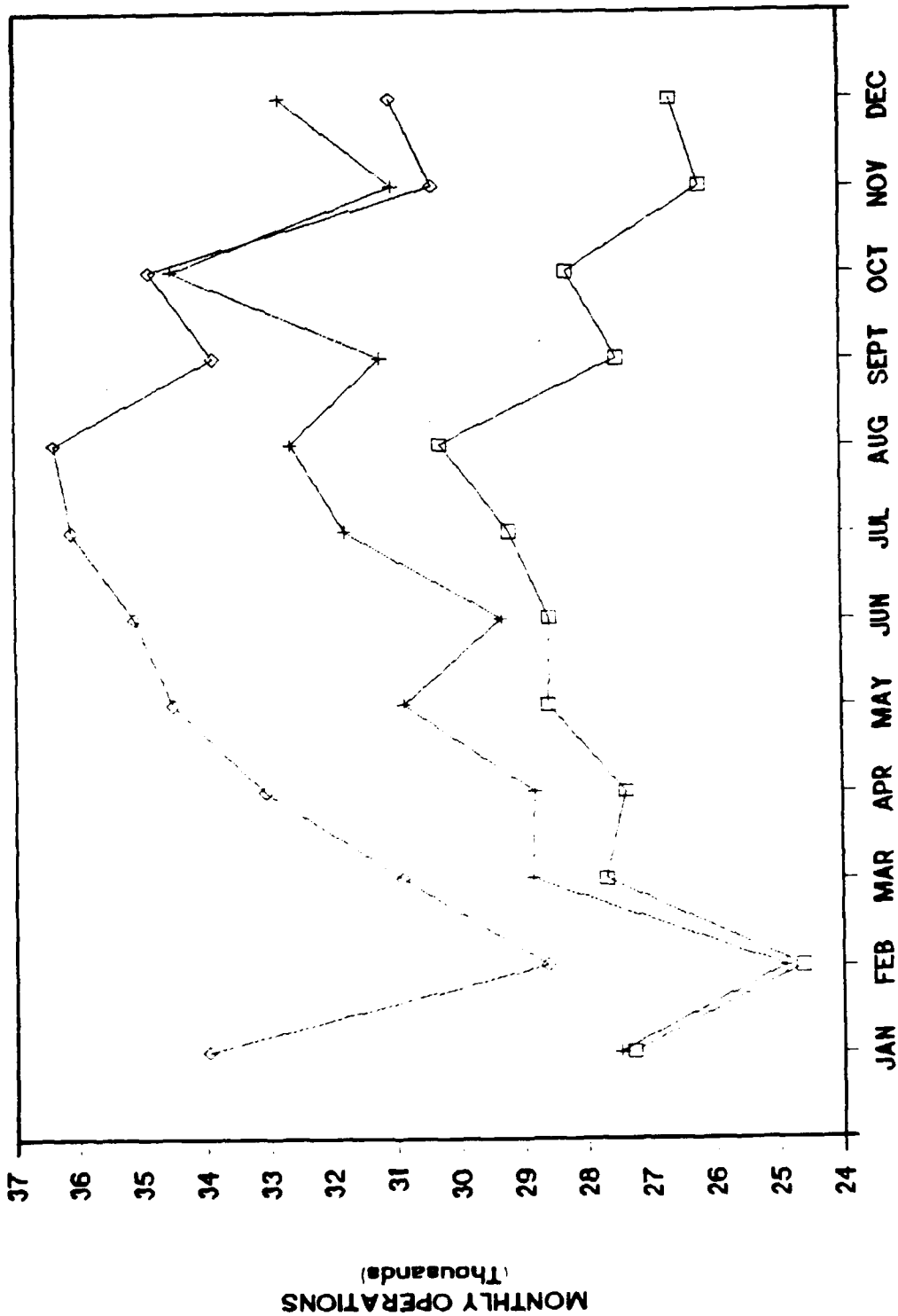
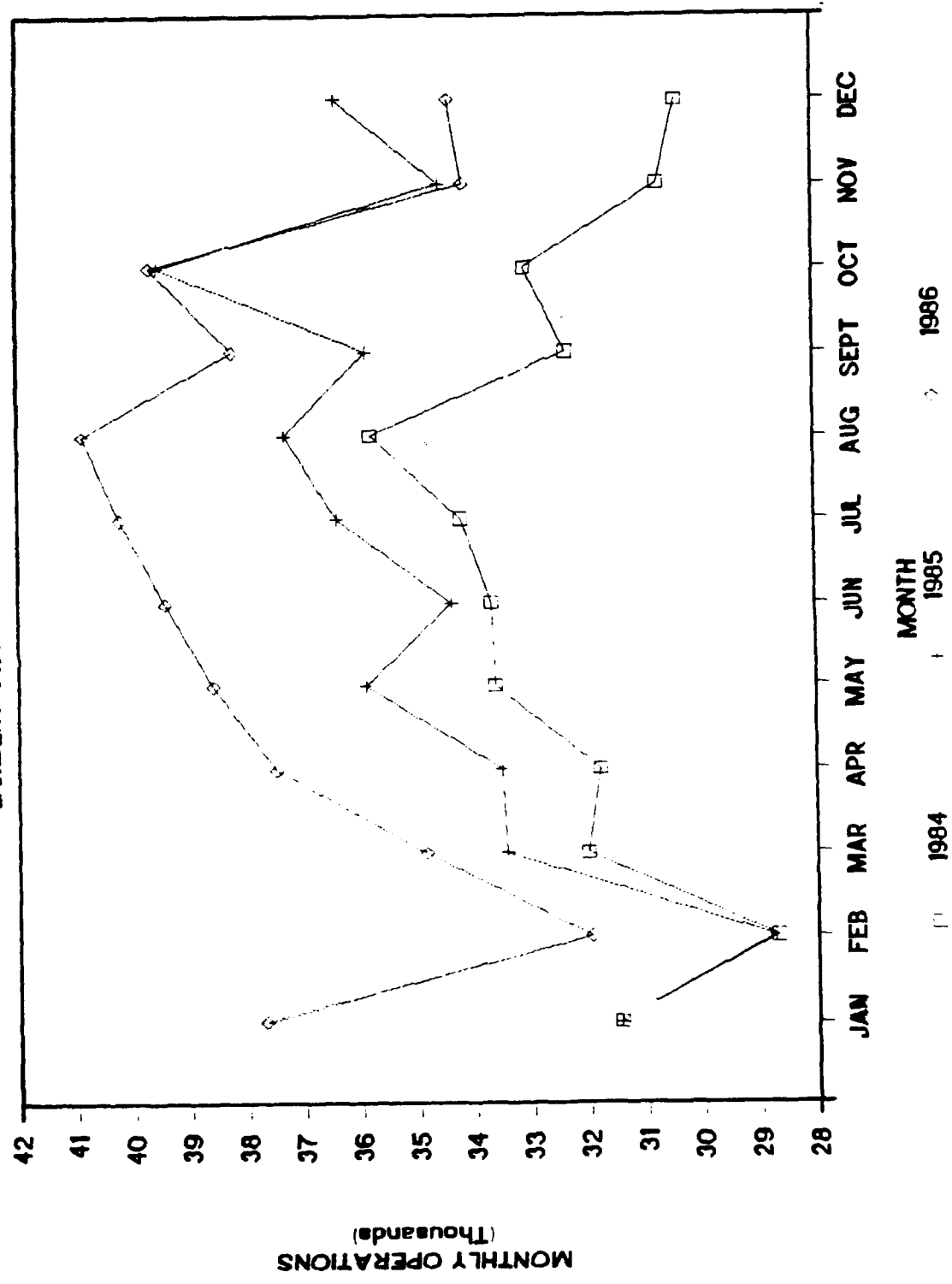


Exhibit B-38
TAMS
3/30/87

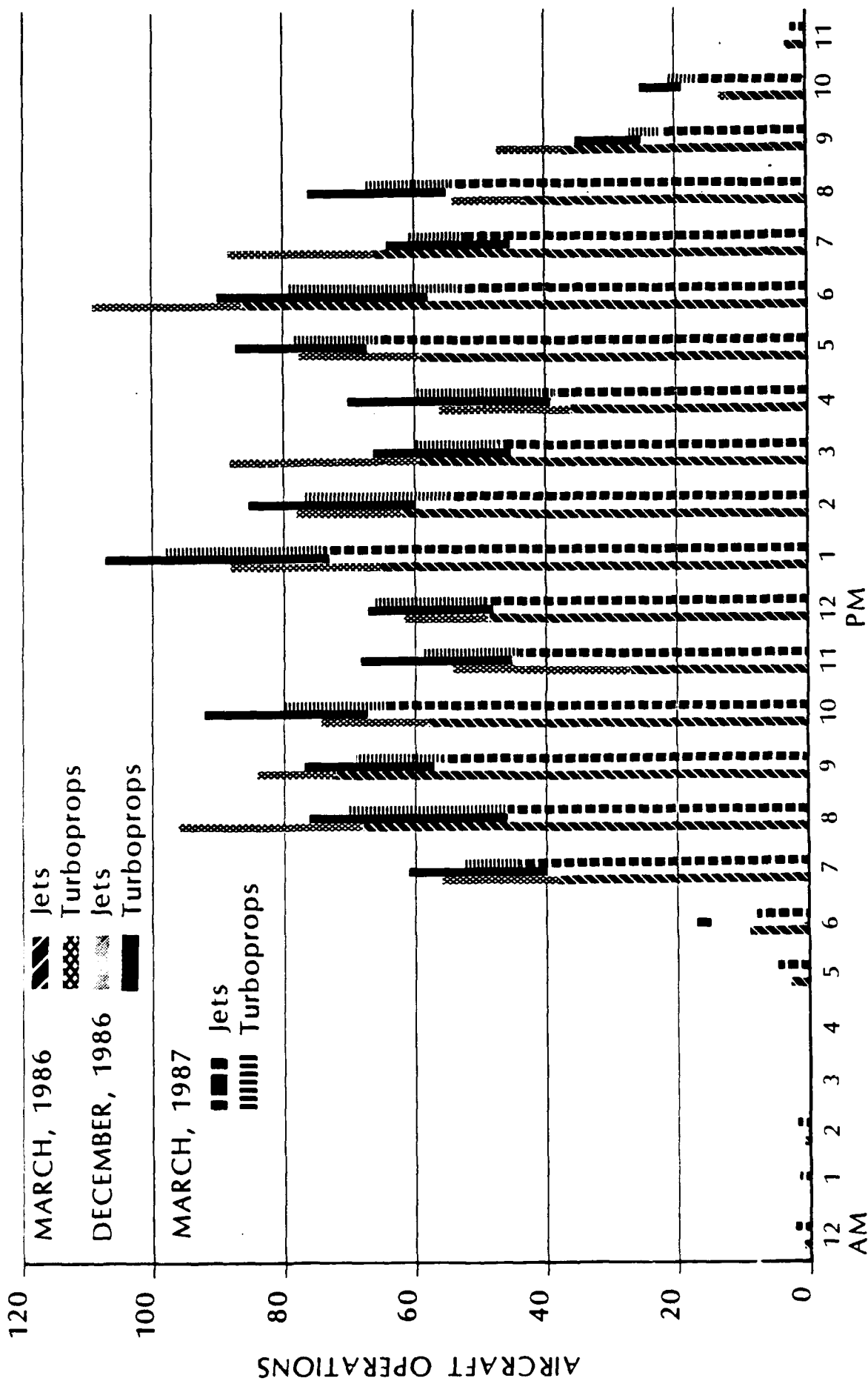
Source: Lambert-St. Louis International Tower Records

AC. AT/COMM & GA COMBINED MONTHLY OPS

LAMBERT-ST. LOUIS INTERNATIONAL

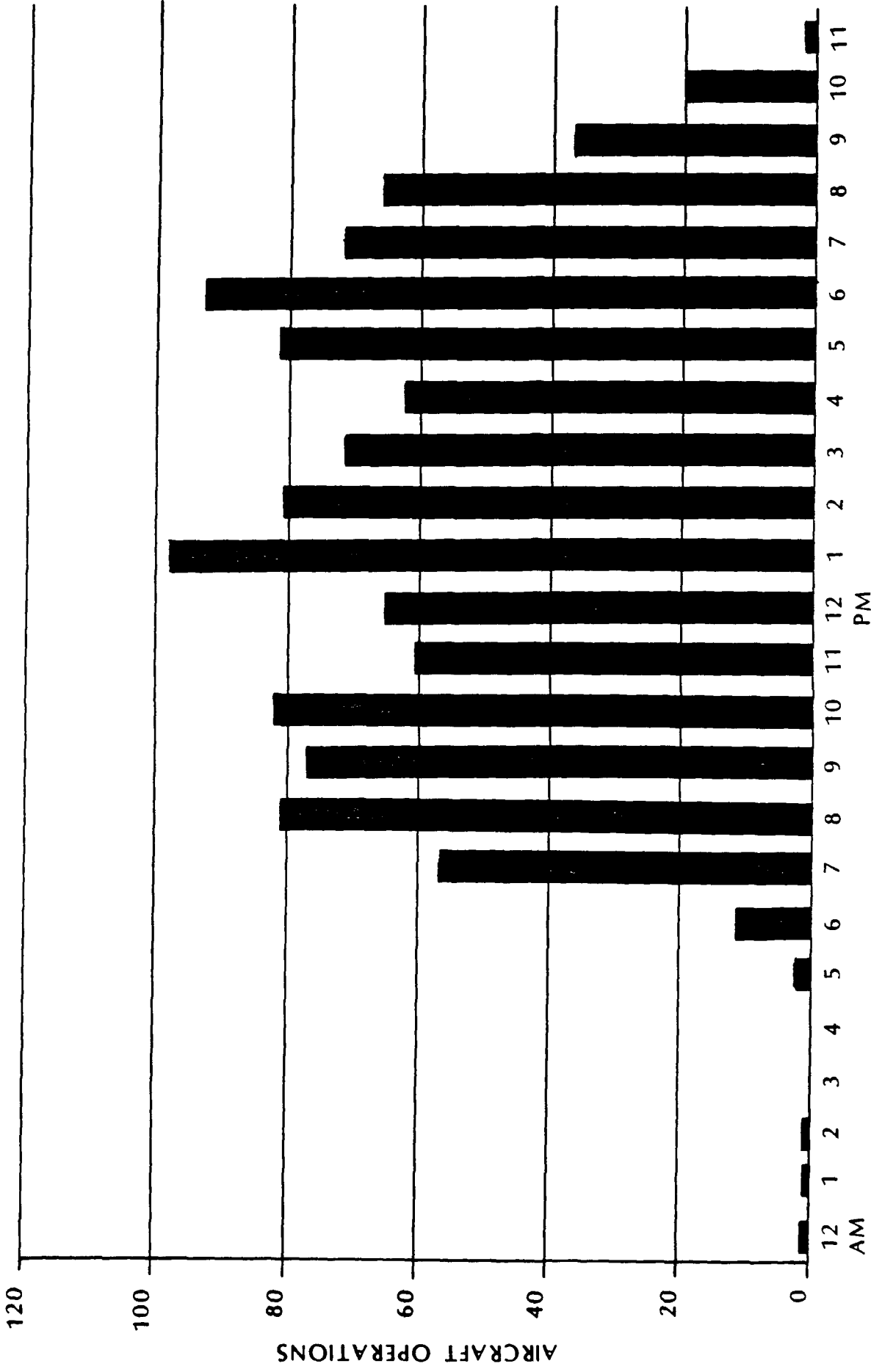


Source: Lambert-St. Louis International Tower Records



HOURLY DISTRIBUTION OF DAILY CARRIER MOVEMENTS Lambert/St. Louis International Airport

Source: Official Airlines Guide for March & December 1986 and March 1987



AVERAGE HOURLY DISTRIBUTION OF DAILY CARRIER MOVEMENTS
Lambert/St. Louis International Airport

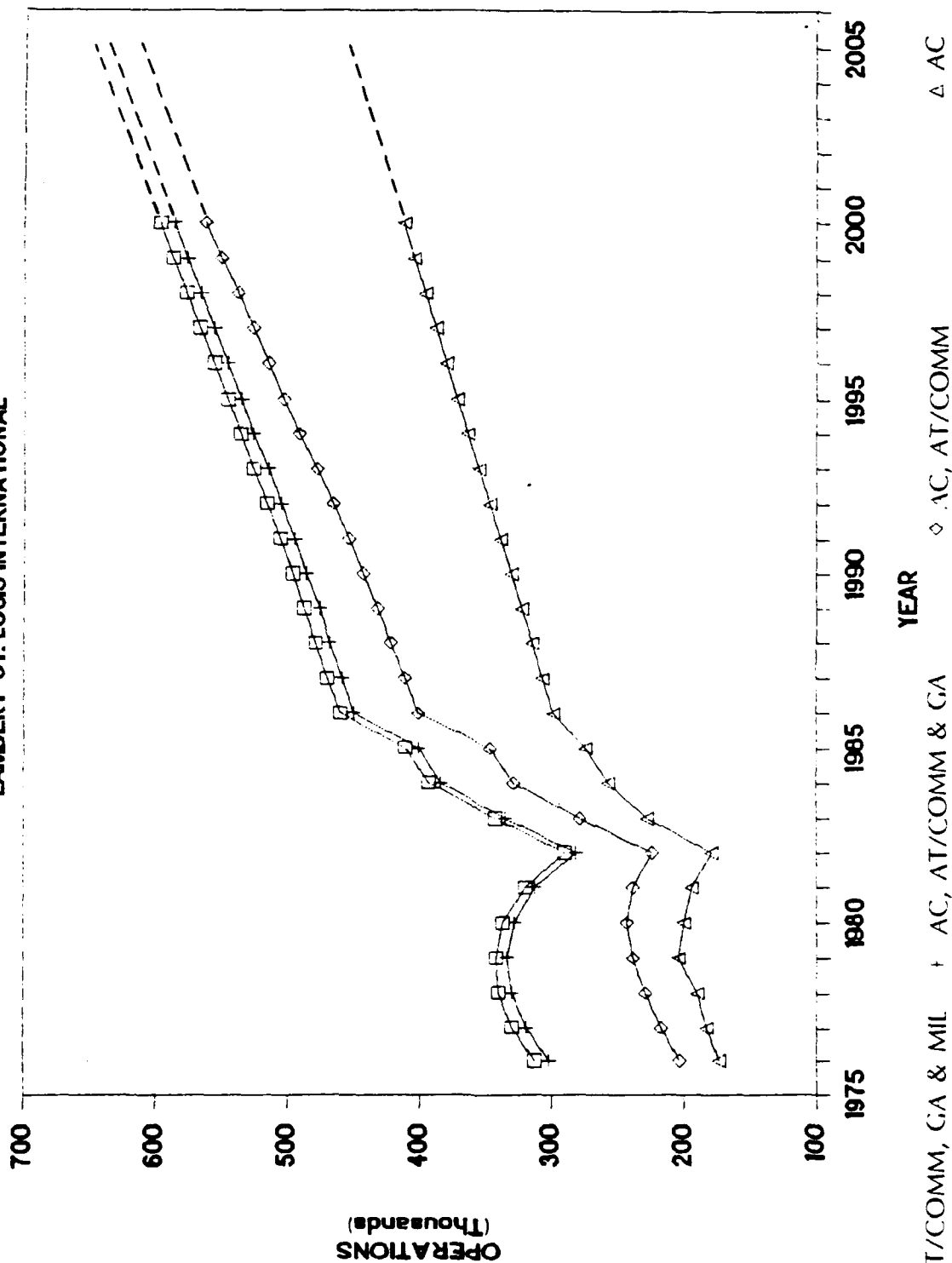
Source: Official Airlines Guide for March & December 1986 and March 1987

Exhibit B-40A.

TAMS

ANNUAL ITINERANT OPERATIONS 1976-2005

LAMBERT-ST. LOUIS INTERNATIONAL



□ AC, AT/COMM, GA & MIL + AC, AT/COMM & GA ◇ AC, AT/COMM △ AC

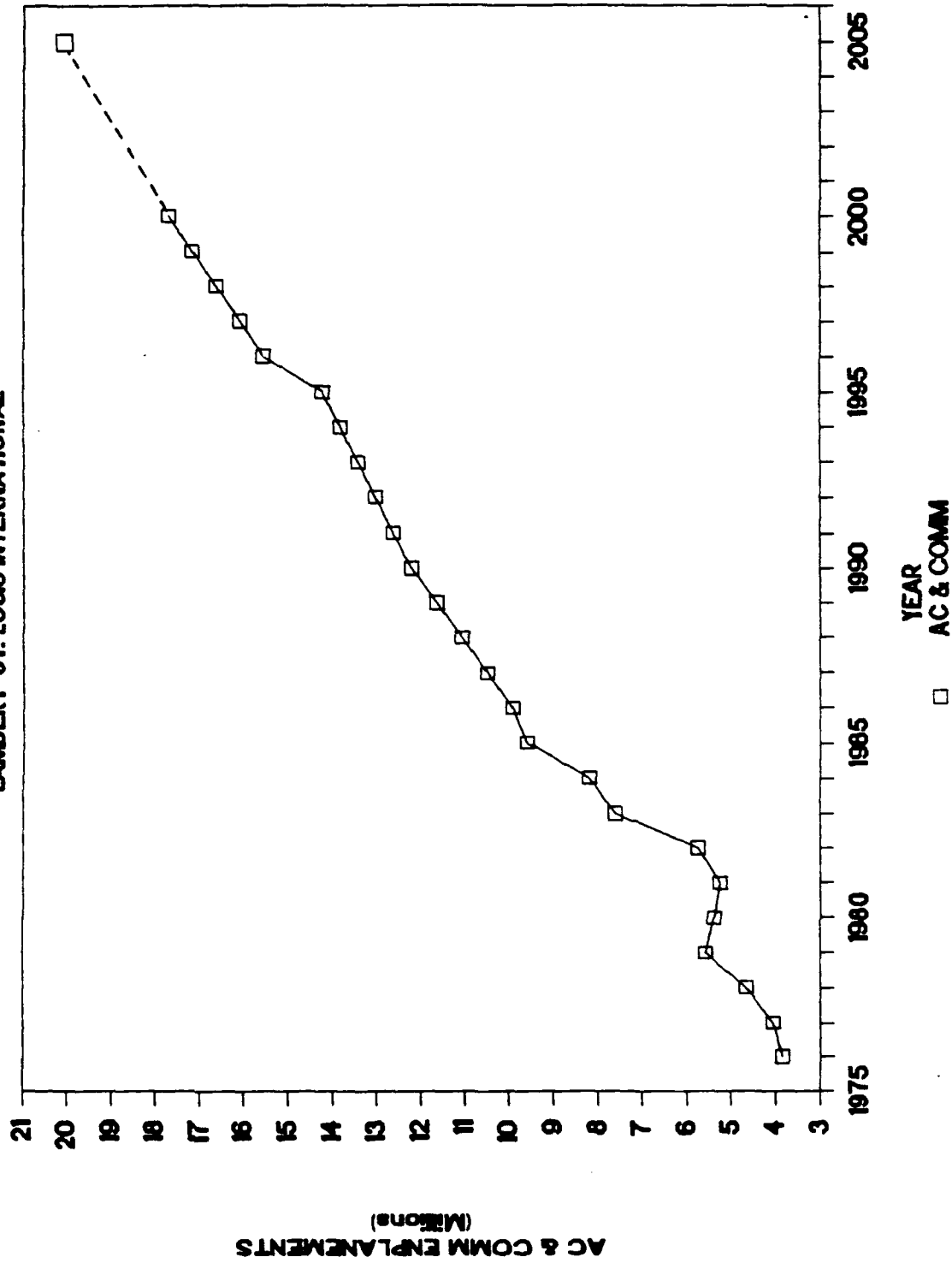
Source: FAA Terminal Area Forecasts FY 1986-2000

FAA Long Range Aviation Projections FY 1998-2010

Exhibit B-41
TAMS
4/1/87

ANNUAL ENPLANEMENTS 1976-2005

LAMBERT-ST. LOUIS INTERNATIONAL



Source: FAA Terminal Area Forecasts FY 1986-2000

Exhibit B-42
TAMS
4/1/87

APPENDIX C

APPENDIX C

A REVIEW OF AIR CARRIER INTEREST IN THE USE OF SCOTT AFB AS A CIVIL COMMERCIAL AIRPORT

	Page No.
Summary	C-1
Findings and Analysis	C-3
Passenger Services	C-6
Cargo Services	C-10
Traffic Volume and Operation	C-15
Airline Interest in Other Alternatives	C-16

APPENDIX C

A Review of Air Carrier Interest in the Use of Scott AFB as a Civil Commercial Airport

Summary

Based on our continuing conversations with airlines, aircraft and engine manufacturers, financial analysts, other airline industry experts and independent analysis, the prospective civil airline demand for a joint use facility at Scott Air Force Base (Scott AFB) can be summarized as follows:

1. A small package express (cargo) hub located at Scott AFB remains the best prospect for ensuring rapid development of economic activity and aircraft operations at a joint-use facility. Despite the anticipated concentration in the small package express industry, Federal Express, one of the consensus survivors in the industry, is now actively reviewing possible locations for a new hub in a region which includes Scott AFB. Further, UPS another consensus survivor of any small package industry shakeout is constrained at its existing Louisville hub and will almost certainly need an additional midwestern hub in less than 10 years. Particularly in terms of Federal Express, prompt action is necessary to ensure

that Scott AFB receives active consideration. Lambert-St. Louis International Airport (Lambert-St. Louis) is effectively ruled out for a small package express hub due to the high concentration of late-night and early morning flights and the attendant noise impacts on the densely populated areas surrounding Lambert-St. Louis.

2. In terms of possible airline passenger services at a joint use facility located at Scott AFB, the existence of a commercial airport at Scott AFB would be most likely to attract service by regional/commuter airlines initially using small (19-35 seat) turboprop aircraft. Such services would be operated to major carrier hubs within approximately 250 nm (e.g., Memphis, Cincinnati, Dayton, Chicago), would be targeted at the sizeable travel market generated by Scott AFB and the surrounding communities, and would seek to provide the region's air travellers with a convenient alternative to Lambert-St. Louis. In a few cases (i.e., Chicago), local market traffic could be sufficient to support services tailored to meet that demand. A Scott AFB-Meigs Field service, for example, could prove particularly attractive for business travel between the Loop and the Arch. Further, the introduction of new generation aircraft such as the Embraer EMB-123

and the Dornier 328 promise to provide sufficiently low operating costs, plus the greater speed and range necessary to effectively compete on so-called "hub bypass" routes such as Scott AFB-Denver (bypassing Lambert-St. Louis) or Scott AFB-Milwaukee (bypassing Chicago) with turboprop aircraft. A Scott AFB-Washington, D.C. service is also of particular interest.

3. In terms of passengers and aircraft operations, a joint use facility at Scott AFB could be expected to generate the following levels of activity within one year of start-up. 1990 is used as our initial forecast year.

Annual Passengers	50,000
Annual Operations	60,800
Passenger	4,700
Package Express	15,600
Military	40,500

Findings and Analysis

The highly competitive nature of the deregulated U.S. airline industry makes airline executives extremely reluctant to disclose route plans in advance, thereby reducing the opportunity for competitors to make preemptive moves in target markets. Under these circumstances, it is not surprising that no passenger or

cargo airline surveyed was willing to commit to serve a joint use facility at Scott AFB. Indeed, most indicated that they would consider Scott AFB (or any military airfield) only when it was clear that joint use would be permitted.

Nonetheless, our discussions with airlines, their explanations of existing service patterns at existing multi-airport cities (i.e., Houston, Washington, Los Angeles, New York), published and private analyses by other industry experts, and our own expert analysis all point to the conclusion that a joint use facility at Scott AFB would receive significant and increasing levels of passenger and cargo airline services.

The rapid consolidation of the U.S. airline industry into 6-8 mega-carriers, each with a collection of regional/commuter affiliates, has effectively placed route selection into the hands of relatively few, very large airlines. Although commuters affiliated with (but not yet owned by) these mega-carriers are legally free to select their own routes, as a practical matter the large airlines control most of the route selection decisions.

A similar process of shake-out and consolidation appears to be underway in the air cargo industry as well. Traditional all-cargo airlines have not fared well in domestic markets since the advent of both airline and trucking deregulation. Competition from truck line, air freight forwarders, and small package express

carriers have limited the growth and profitability of traditional air cargo airlines. Flying Tigers, the largest of the traditional cargo airlines, is reportedly ready to withdraw from the domestic U.S. market and operate only flights feeding its international operations. The renewed interest by passenger airlines in providing cargo service in the bellies of passenger aircraft and the forecast growth in domestic airline capacity both suggest a difficult future for traditional all-cargo airlines in U.S. domestic markets.

The U.S. freight forwarding industry has become significantly more concentrated since air cargo deregulation in 1977. Freight forwarders were among the principal beneficiaries of the abundant belly capacity available on passenger aircraft. Forwarders historically bought space from passenger and all-cargo airlines for the air transportation segment of their cargo movements, but since deregulation, they have significantly increased operations of their own aircraft. Thus, forwarders can offer pick-up, sorting, consolidation and delivery services, using a combination of belly-space on passenger aircraft or, where advantageous, their own aircraft to provide door-to-door service for their customers.

Even in the rapidly growing small package express market, where growth has averaged 25 percent or more per annum and is expected to continue at a double-digit pace for the next decade, both airlines and outside analysts project some attrition and

consolidation among existing competitors. Continued growth in volume, however, will require the development of additional hubs by the remaining small package express operators.

Passenger Services

Texas Air Corporation

Continental (CO): [includes New York Air, People Express, Britt, and Provincetown Boston (PBA)]: CO recently resumed service to Lambert-St. Louis for the first time since the carrier entered Chapter 11 in the early 1980's. According to Texas Air, CO is likely to "focus on Lambert" for the next few years while it "rebuilds" its presence in St. Louis. Given CO's current modest level of operations, Lambert-St. Louis is viewed as adequate to meet CO's needs to least through the medium term. Including the recently acquired People Express, CO will eventually serve Lambert-St. Louis from Denver, Houston, and Newark.

Eastern (EAL): EAL serves St. Louis from Atlanta, Kansas City and Miami. According to both Eastern and Texas Air, most of the new route opportunities "will go to Continental until Eastern gets its costs under better control." Based on current and anticipated level of operations, EAL feels that its requirements can probably be handled at Lambert-St. Louis.

Earlier this month, CO announced that it would acquire Presidential's gates at Dulles and that Presidential would become a CO commuter. Based on (a) Scott AFB's large Washington-oriented base of traffic, (b) Presidential's smaller (BAe 146) aircraft, (c) the desire to build up its Dulles hub to compete with United, and (d) the opportunity to capture this St. Louis originating traffic before it gets to TWA's stronghold at Lambert-St. Louis, a Dulles-Scott AFB route could prove quite attractive to Presidential; It is too small (initially) to attract the large carriers but probably is large enough to support service by a BAe 146. Presidential is not financially robust, however, and it is conceivable that they may be forced to sell out to Texas Air.

Having cancelled operations at Lambert, Meigs Field routes are virtually the only bright spot for Britt Airways, the People Express commuter recently acquired by CO. If a viable Scott AFB-Meigs market exists, CO may be interested. Right now, Texas Air is in the process of redeploying Britt's fleet; a number of aircraft are being shifted to Philadelphia, and it is unclear what future Texas Air sees for itself in the midwest.

United (UAL): like Continental, UAL is trying to build up a new Dulles hub; Air Wisconsin gives UAL access to small jet aircraft well-sized to the Scott AFB-D.C. market. Absent a showing of strong Scott AFB-Denver flows, UAL is unlikely to introduce service there in competition with its Lambert-St. Louis

operations. Chicago is similar to Denver (i.e., United will be reluctant to divert existing Lambert-St. Louis flows). However, Air Wisconsin can provide turboprop or small jet service to Scott AFB to tap the local market to Chicago. In our view, such a service would be among the first introduced when Scott AFB becomes a joint use facility.

TWA: as was the case during the Feasibility Study, TWA is the main supplier at Lambert-St. Louis, even more so with the acquisition of Ozark, which permits some consolidation of operations at Lambert-St. Louis. Operations at Scott AFB due not appear to be of interest to them.

Northwest (NWA): at the moment, NWA is engaged integrating Republic, rather than with planning new routes. Nevertheless, their Memphis hub is within easy flying distance for a turboprop aircraft. Such a service would permit NWA to flow the Washington, D.C. traffic from Scott AFB via its non-stop Memphis service and could provide valuable incremental traffic for other NWA services at Memphis.

American: American's new hub at Nashville might be a prospect for commuter service from Scott AFB for Washington, D.C. service. A spoke to American's Chicago O'Hare hub by an American Eagle commuter affiliate is also a possibility (for reasons similar to those described for United). Service to American's

other hubs (Dallas, Raleigh-Durham, and San Juan) do not appear to be in the cards at this time.

U.S. Air/Piedmont: Scott AFB appears to be "Piedmont's kind of airport" (i.e., smaller, semi-rural, and lacking in service by larger airlines). Dayton is the most likely Piedmont hub for Scott AFB service. Piedmont has a good mix of small jet (F-28) equipment plus wholly owned as well as affiliated regional airlines. Piedmont's acquisition by U.S. Air is likely to slow new route expansions temporarily while the merged carriers sort out their expansion and equipment plans. Service from Scott AFB to U.S. Air's Pittsburgh hub is a possibility, but the market may be too small for U.S. Air's larger aircraft. The effect of the recent PSA acquisition is unclear at this time, but PSA does have the right-size equipment (BAe 146) to serve a Scott AFB-Pittsburgh market.

Pan Am (PAA): highly unlikely to serve Scott AFB. PAA is not seeking new airports; Pan Am's service to St. Louis would be for traffic to connect with Pan Am's international services at New York.

Delta: service by Delta Connection commuter from Scott AFB to Delta's newest hub at Cincinnati is another reasonable prospect for a joint use facility at Scott AFB. Other Delta hubs at Atlanta and Dallas are not realistic for Scott AFB service

immediately, although Atlanta could become attractive as traffic at Scott AFB builds. Delta's recent acquisition of Western does not appear to affect the prospects for service to Scott AFB.

Cargo Services

Federal Express

Federal is currently reviewing possible sites for an additional hub in the midwest, and Scott AFB clearly falls within the area under review. (The target area runs from Columbus on the east to Salina on the west; and from Chicago on the north to St. Louis on the south). According to Federal Express, they anticipate a minimum of 2-3 years before they could establish a new hub unless they take over facilities vacated by an existing competitor. The existing Federal Express hubs at Memphis, Newark, and Oakland can accommodate anticipated growth for the next several years.

Although they prefer parallel runways which can handle simultaneous operations, Federal Express does not rule out a single runway facility - particularly if there is a firm commitment to building a second runway - since they anticipate a build-up of service at the new hub over a several year period. The runway(s) should be long enough to accommodate a fully loaded DC-10 (i.e., 9000-10,000 feet).

Federal Express has looked at Scott AFB and would consider it for a new hub. They are willing to have Federal's Airport Relations group provide information to IDOT regarding typical small package hub requirements, but stressed that this is a service provided to any interested airport and should not be interpreted as indicating a Federal Express preference for Scott AFB.

The senior level committee reviewing the "fourth hub" issue for Federal Express is considering two questions:

- a. Can a fourth hub work for Federal Express?
- b. Where should it be located?

Although the first question has not yet been definitively resolved, the answer to date is "probably yes." Federal Express has publicly indicated the need for an additional hub.

As we concluded in the feasibility phase, Federal Express would be a superb "anchor tenant" around which to build the airport. Timing will be critical, however, and steps should be taken immediately to ensure that Federal Express is kept fully abreast of the progress of the Scott AFB project. They seemed particularly interested in the position of the Air Force.

UPS

Like Federal Express, UPS has an established midwestern hub and is a consensus "survivor" in any industry shake-out. Also, it appears that UPS' existing hub at Louisville will be unable to accommodate the anticipated expansion of UPS operations. Thus, UPS will be in the market for an additional hub in the not-too-distant future. UPS does not appear to be actively searching for a new hub at this time.

It is probable that UPS (like Federal Express) may wait to see if industry attrition/consolidation creates opportunities to obtain existing facilities at bargain prices. If Flying Tiger, for example, withdraws from the domestic air cargo business, Tiger's large facilities at Rickenbacker Field could become available. Similar questions have been raised regarding Purolator Courier's facilities at Indianapolis.

Flying Tiger (FTL)

Flying Tiger has announced that it is leasing additional cargo aircraft (DC-8-73's and B-727's). Since FTL only recently moved its hub to Columbus from Chicago O'Hare, the carrier is not interested in a new hub at this time. Based on their existing and anticipated level of operations in Lambert-St. Louis, Lambert-St. Louis is probably adequate for the time being.

Recently, speculation has increased that FTL will reorient its operations to focus almost entirely on international operations; domestic services would be deployed to support international service rather than to serve domestic U.S. air cargo markets. If FTL does adopt such a strategy, the new FTL hub at Columbus would probably become unnecessary. In either event, FTL's interest in Scott AFB is likely to be minimal.

Emery

Emery's small package express business has been only marginally successful, although Emery has enjoyed a stronger performance in its traditional forwarding business. Emery's Dayton hub appears to have ample capacity for expansion over the foreseeable future, and Emery does not appear to be interested in additional midwestern hubs at this time.

DHL

DHL is using Cincinnati as its hub as it seeks to build a domestic market presence to match its prominence as an international courier. Relative to air and groundside capacity, DHL appears to have ample room for expansion at Cincinnati. It has shown no interest in shifting or establishing a new hub.

Evergreen

In a very thorough interview with Evergreen during the feasibility study, the carrier indicated that its major shippers (auto parts suppliers) preferred Lambert-St. Louis because of its proximity to the auto assembly facilities in the St. Louis area. The carrier has recently established terminal facilities at Terre Haute, Indiana.

Airborne Express

Airborne owns and operates its airport/hub at Wilmington, Ohio. Airborne stated that Scott AFB would be a good location for a hub but, because of its facility in Wilmington, has no interest in shifting to or establishing a hub at Scott AFB at this time.

Nippon All Cargo

Japanese airlines (Nippon All Cargo and JAL) continue to maintain a strong preference for Chicago as a midwestern cargo airport. Given the on-going U.S.-Japan air service negotiations on this (and many other) issues, it seems unlikely that Japanese carriers will consider other possible midwestern destinations until the negotiations resolve the issue. If Chicago cargo rights are awarded to only one Japanese airline, however, the other is likely to be much more interested in an alternative such as a joint-use facility at Scott AFB. The likely timing of Japanese

carrier cargo access to Chicago (early 1990's) thus would fit well with the projected availability of a facility at Scott AFB.

Traffic Volume and Operations

Small Package Express

Based on a review of all existing small package hubs in the midwest, it is clear that 30 flights/60 operations is the minimum level of flight activity at any existing facility. Assuming that a small package express hub at Scott AFB would operate initially at this minimum level of activity produces 15,600 operations by small package aircraft in the initial forecast year.

30 flights = 60 operations/day

60 ops/day x 5 days/week = 300 ops/week

300 ops/week x 52 weeks/year = 15,600 operations/year

Passengers

Based on 1985 SATO sales at Scott AFB, conservative estimates of traffic from the area surrounding Scott AFB, and FAA projections on average regional aircraft size, a volume of 50,000 passengers and 4,700 aircraft operations per year is a reasonable estimate of activity at Scott AFB for the initial forecast year based on the following:

30,000 tickets sold at Scott SATO/1985
30,000 tickets x 2 (round trip) = 60,000 Scott O & D pax
60,000 pax x 50 % (estimated capture rate) = 30,000 pax/year
30,000 Scott pax + 20,000 area pax(est) = 50,000 total pax/year
50,000 pax/yr/365 days per year' = 137 pax/day
137 pax/day/10.4 pax/flight, (1) = 13.1 flights/day
13 flights/day x 365 days/year = 4700 operations/year (rounded)

Rate of Increase

Activity at a joint-use facility at Scott AFB after the initial forecast year is expected to increase. FAA forecasts for the growth in passenger traffic and aircraft operations provide a reasonable basis for estimating the increased level of activity as Scott beyond the base year forecast. For the 1987-1998 period, the FAA estimates that traffic on regional/commuter airlines (the predominant type of passenger aircraft operations likely at Scott AFB during the initial forecast period) will grow at an average rate of growth of 8.3 percent.

Airline Interest in Other Alternatives

While individual airlines were not queried on their individual interest in the other locations being considered, it is evident that the built-in market of Air Force transportation using civilian airlines is a major incentive. Commuter operations at other small communities has a checkered past. Some have been

successful, others have failed.

In our judgement Scott AFB would be the preferred alternative over the other candidates, at least during the early years of development.

APPENDIX D

APPENDIX D
NOISE IMPACTS

	Page No.
The Measurement of Noise	D-1
The Effects of Noise	D-3

APPENDIX D

Noise Impacts

The Measurement of Noise

The unit for measuring or specifying noise is the decibel, abbreviated db. Unlike other units to which we are accustomed, like the inch, the point, or the gallon, the db represents a ratio. If the noise energy doubles, the energy is said to have increased 3 db. (The number of db in a change of noise level is ten times the logarithm of the energy change. If the energy doubles, the change is 3 db, because the logarithm of 2 is very close to 0.3.)

Zero db is an energy level defined on the basis of being very close to the threshold of hearing for the normal human ear. The background noise in an isolated spot in a forest may be as low as 20 db. A quiet living room, without a TV, may be about 40 db, while a small group conversation is about 60 db. Average street traffic can be about 80 db, while a heavy truck reaches a level of about 90. A rock group is about 110 db, and a jet engine 75 yards away approaches the threshold of pain at 140 db.

All of these numbers are relative to the defined zero level. An increase of 10 db means 10 times as much energy. Consequently, there is 100 times as much noise energy in the small group

conversation as in the quiet living room, and 100,000 times as much noise energy from a heavy truck a few feet away as in a quiet living room.

The human ear does not respond the same to different frequencies of sound with the same energy, being less sensitive to very high and very low tones. To provide a measure which approximates the response of the human ear, the db(A) has been devised and specified, where the response to high and low frequencies has been decreased. Leq has been developed for specifying energy levels over time. 65 Leq means the same total noise energy over a period of time, say 24 hours, as there would be if the level were a constant 65 db(A).

The measure of noise used in this study is Ldn, or Day-Night level. Ldn was adopted as the standard unit for use by the Federal Aviation Administration in 1980. It is a number representing the average energy from noise over a 24 hour period, with noise during the night (10:00 p.m. to 7:00 a.m.) treated as though it were 10 db louder than the actual value. The effect is that the noise of an aircraft at night is treated as if it were the source of as much noise energy as ten daytime operations.

A constant noise of 65 db(A) during the hours from 7:00 a.m. until 10:00 p.m., and a constant noise of 55 db(A) during the remaining hours from 10:00 p.m. until 7:00 a.m. would have the

same noise energy an Ldn of 65. Similarly, an Leq of 65 during the day and 55 during the night would produce an Ldn of 65. The Ldn metric takes into account the fact that noise levels fluctuate in intensity. A noise pulse of 75 db(A) lasting 10 seconds would have the same amount of energy as 100 seconds at 65 db(A) or 1000 seconds at 55 db(A). Put another way, for every 1 second at the 75 db level, there must be 1000 seconds at the 55 level, or the equivalent, to maintain an average of 65.

Although noise may be generated from many sources, this discussion is concerned only with aircraft noise. It is recognized that construction noise or traffic noise at a particular location may be louder than the noise from aircraft. However, because the consideration of noise from aircraft will be concerned with levels that may interfere with noise sensitive activities of people, and because of the different settings of the alternatives, this study considers only aviation noise in the areas potentially affected by the increase in activity at the various locations.

The Effects of Noise

The potential effects of noise are:

- Effects on Hearing
- Effects on Health
- Effects on Communication

- Effects on Sleep
- Effects on Community Acceptance

Quoting from a summary study published by the FAA in 1984, (1) "Even with a margin of safety, no effects on hearing are expected below an Ldn of 75 db(A). Research on non-auditory effects of noise on health is continuing, but no evidence has yet been found of noise as a cause of disease at levels below that which may affect hearing. Somewhat more is known about noise interference with communication. While causing some interference with speech communication, a steady background noise of 60 db(A) still permits 95% speech intelligibility. An EPA group has estimated that fluctuating noise of 65 db (A) average (Leq) outdoors would permit the same level (95% intelligibility) of communication. This level outdoors would cause no problems with speech communication indoors. As regards sleep problems, some reactions, in terms of EEG activity, can be expected at essentially any noise level. Although levels of 40 db(A) have been recommended to avoid interference with sleep in hospitals, there is some evidence that more severe responses, such as awakening, require peak levels in the order of 85 db(A) outside to cause sleep impacts inside. Such levels are not likely to occur in areas, particularly with aviation noise, (with levels of) 65 Ldn outside. Finally, as noise increases, with any metric, so does community annoyance and adverse public reaction. However, an objective measurement of public annoyance is not easily defined."

In short, no specific adverse effects can be identified at noise levels below 65 Ldn. Above 65 Ldn, measurable significant adverse effects are limited, first, to speech communication, and second, at somewhat higher levels, to sleep interference. Both can be mitigated inside with appropriate construction techniques. As for community annoyance, the degree of annoyance at any level depends so highly on factors that are not predictable and not understood that forecasts in particular cases are not reliable. Generally, however, it has been found that below 65 Ldn, noise complaints at levels much higher than 65 Ldn, and situation at levels lower than 65 Ldn where there have been significant complaints.

Part 150 of the Federal Aviation Regulations (2) provides guidance on land uses compatible with various levels of aviation noise. The regulation points out that the responsibility of determining the acceptable and permissible land uses is with the local authority, and that the designations contained in Part 150 do not constitute a Federal determination that a use is acceptable or unacceptable under Federal, state or local law. Nevertheless, the guidance contained in Part 150 is based upon the best available scientific knowledge about the effects of noise.

The compatibility standards in Part 150 suggest that any use is compatible with noise below 65 Ldn. Between 65 Ldn and 75 Ldn, houses, apartments, hotels, schools, churches and auditoriums should be built with sound insulation techniques so as to provide the same noise levels inside as are found inside normal construction with an outside level of 65 Ldn. In other words, up to 10 db of extra sound insulation should be provided. Between 65 and 75 Ldn, other uses such as public uses, commercial and manufacturing uses, agriculture and many recreational activities are compatible if buildings in use by the public or occupied as residences have the appropriate extra insulation. Some of these uses are compatible with levels higher than 75 Ldn.

FOOTNOTES

- (1) FAA-EE-84-18, Land Use Compatibility Study: Aircraft Noise and Land Use, June 1984
- (2) 14 CFR Part 150

APPENDIX E

APPENDIX E

Prime farmlands are those where value is derived from their general advantage as cropland due to soil and water conditions.

It is the policy of the Illinois Department of Agriculture to promote the protection of Illinois farmland by seeking the greatest degree of protection for Classes I, II and III lands and a lesser degree of protection for Classes IV - VIII through the Farmland Preservation Act.

The land capability class system is a method developed by the USDA-Soil Conservation Service to broadly categorize soil groupings. The classes are based on crop production restrictions, landscape and soil properties; Class I land has none to few limitations and Class VIII has the greatest limitations. Some factors considered are soil fertility, wetness, flooding, soil depth, slope and erosion. The eight land capability classes are as follows:

- Class I soils have few limitations that restrict their use;
- Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices;
- Class III soils have severe limitations that reduce the choice of plants, require special conservation practices, or both;
- Class IV soils have very severe limitations that reduce the choice of plants, require very careful management, or both;

- Class V** soils are subject to little or no erosion but have other limitations, impractical to remove, that limit their use largely to pasture, woodland, or wildlife habitat;
- Class VI** soils have severe limitations that make them generally unsuitable for cultivation and limit their use largely to pasture woodland, or wildlife habitat;
- Class VII** soils have very severe limitations that make them generally unsuitable for cultivation and limit their use largely to pasture, woodland, or wildlife habitat; and
- Class VIII** soils and land forms have limitations that preclude their use for commercial plants and restrict their use to recreation, wildlife habitat, or water supply or to aesthetic purposes.

APPENDIX
SOILS KEY
MADISON COUNTY SOILS

<u>SYMBOL</u>	<u>NAME</u>	<u>LAND CLASSIFICATION</u>
8F	Hickory Silt Loam, 15 to 30% Slopes	VI
16	Rushville Silt Loam	III
41B	Muscatine Silt Loam, 1 to 4% Slopes	II
46A	Herrick Silt Loam, 0 to 3% Slopes	II
50	Virden Silty Clay Loam	II
61B	Atterberry Silt Loam, 1 to 4% Slopes	II
68	Sable Silty Clay Loam	II
113B	Oconee Silt Loam, 2 to 5% Slopes	II
119C3	Elco Silty Clay Loam, 5 to 10% Slopes, Severely Eroded	IV
119D3	Elco Silty Clay Loam, 10 to 15% Slopes, Severely Eroded	IV
120	Huey Silt Loam	IV
127B	Harrison Silt Loam, 2 to 5% Slopes	II
165	Weir Silt Loam	III
278A	Stronghurst Silt Loam, 0 to 2% Slopes	II
278B	Stronghurst Silt Loam, 2 to 5% Slopes	II
279B	Roretta Silt Loam, 2 to 5% Slopes	II
279B3	Roretta Silty Clay Loam, 2 to 5% Slopes, Severely Eroded	III
279C2	Roretta Silty Loam, 5 to 10% Slopes, Eroded	III
279C3	Roretta Silty Clay Loam, 5 to 10% Slopes, Severely Eroded	IV
279D3	Roretta Silty Clay Loam, 10 to 15% Slopes, Severely Eroded	IV
280B	Fayette Silt Loam, 2 to 5% Slopes	II
280C2	Fayette Silt Loam, 5 to 10% Slopes, Eroded	III
280D2	Fayette Silt Loam, 10 to 15% Slopes, Eroded	III
280E3	Fayette Silty Clay Loam, 15 to 20% Slopes, Severely Eroded	VI
280F	Fayette Silt Loam, 15 to 30% Slopes	VI
333	Wakeland Silt Loam	II
334	Birds Silt Loam	III
386B	Downs Silt Loam, 2 to 5% Slopes	II
386C2	Downs Silt Loam, 5 to 10 Slopes, Eroded	III
415	Orion Silt Loam	II
474	Piasa Silt Loam	III
517A	Marine Silt Loam, 0 to 2% Slopes	II
517B	Marine Silt Loam, 2 to 5% Slopes	II
533	Urban Land	N/A
620B2	Darmstadt Silt Loam, 2 to 5%, Eroded	III
620C3	Darmstadt Silty Clay Loam, 3 to 8% Slopes, Severely Eroded	IV

<u>SYMBOL</u>	<u>NAME</u>	<u>LAND CLASSIFICATION</u>
801B	Orthents, Silty, Undulating	N/A
801E	Orthents, Silty, Steep	N/A
916B	Darmstadt-Ocone Silt Loams, 1 to 5% Slopes	III
936F	Fayette-Hickory Complex, 15 to 30% Slopes	VI
941	Virden-Piasa Silt Loams	III
993	Cowden-Piasa Silt Loams	III
995	Herrick-Piasa Silt Loams	III
2041B	Muscatine-Urban Land Complex, 1 to 4% Slopes	N/A
2279B	Roretta-Urban Land Complex, 2 to 8% Slopes	N/A
2280D	Fayette-Urban Land Complex, 8 to 15% Slopes	N/A

NOTE: This key to be used for soils related to St. Louis Regional, Shafer-St. Jacob and Highland-Winet Airports.

SOURCE: Soil Survey of Madison County, Illinois, USDA, Soil Conservation Service, March, 1986.

APPENDIX
SOILS KEY
BOND COUNTY SOILS

<u>SYMBOL</u>	<u>NAME</u>	<u>LAND CLASSIFICATION</u>
7C3	Atlas Silty Clay Loam, 5 to 10% Slopes	IV
13A	Bluford Silt Loam, 0 to 2% Slopes	II
13B	Bluford Silt Loam, 2 to 5% Slopes	II
46	Herrick Silt Loam	III
48	Ebbert Silt Loam	II
113A	Oconee Silt Loam, 0 to 2% Slopes	II
113B	Oconee Silt Loam, 2 to 5% Slopes	II
120	Huey Silt Loam	IV
128B	Douglas Silt Loam, 2 to 7% Slopes	II
287A	Chauncey Silt Loam, 0 to 3% Slopes	III
333	Wakeland Silt Loam	II
474	Piasa Silt Loam	III
581B2	Tamalco Silt Loam, 1 to 5% Slopes	III
620A	Darmstadt Silty Clay Loam, 2 to 5% Slopes	III
620B3	Darmstadt Silty Clay Loam, 2 to 5% Slopes	III
916A	Oconee - Darmstadt Silt Loams, 0 to 3%	III
916B2	Oconee - Darmstadt Silt Loams, 2 to 5% Slopes	III
941	Virden - Piasa Silt Loams	III
993	Cowden - Piasa Silt Loam	III
995	Herrick - Piasa Silt Loam	III

**SOILS KEY
ST. CLAIR COUNTY SOILS**

<u>SYMBOL</u>	<u>NAME</u>	<u>LAND CLASSIFICATION</u>
41A	Muscatine Silt Loam, 0 to 3% Slopes	I
50	Virden Silt Loam	II
61A	Atterberry Silt Loam, 0 to 3% Slopes	I
70	Beaucoup Silty Clay Loam	II
71	Darwin Silty Clay	III
V71	Darwin Variant Silty Clay	III
81A	Littleton Silt Loam, 0 to 2% Slopes	I
108	Bonnie Silt Loam	III
162	Gorham Silty Clay Loam	II
165	Weir Silt Loam	III
180	Dupo Silt Loam	II
280B	Fayette Silt Loam, 2 to 4% Slopes	II
280B2	Fayette Silt Loam, 3 to 6% Slopes, Eroded	II
280C2	Fayette Silt Loam, 6 to 12% Slopes, Eroded	IV
304B	Landes Fine Sandy Loam, 1 to 6% Slopes	III
308B	Alford Silt Loam, 1 to 4% Slopes	II
308B2	Alford Silt Loam, 1 to 4% Slopes, Eroded	II
308C2	Alford Silt Loam, 4 to 10% Slopes, Eroded	III
308D2	Alford Silt Loam, 10 to 18% Slopes, Eroded	IV
331	Haymond Silt Loam	I
333	Wakeland Silt Loam	II
426	Karnak Silty Clay	III
452	Riley Silty Clay Loam	II
U452	Riley-Urban Land Complex	N/A
454A	Iva Silt Loam, 0 to 2% Slopes	II
454B2	Iva Silt Loam, 2 to 4% Slopes, Eroded	II
533	Urban Land	N/A
570B	Martinsville Loam, 1 to 7% Slopes	II
619	Parkville Silty Clay	II
620B2	Darmstadt Silt Loam, 2 to 4% Slopes, Eroded	III
802	Orthents, Loamy	VI

NOTE: This key to be used for soils related to Scott AFB and St. Louis Downtown Parks Airport.

SOURCE: Soil Survey of St. Clair County, Illinois, USDA, Soil Conservation Service, October, 1978.

APPENDIX F

APPENDIX F
COMMENTS ON PRELIMINARY PHASE I REPORT
AND DISPOSITION

	Page No.
Institutional	F-2
Technical - Airport/Airspace	F-4
Environmental - Parklands, Wetlands and Noise	F-6
Environmental - Socioeconomics, Community, Farmlands	F-8
Miscellaneous/General	F-11

APPENDIX F

Comments on Preliminary Phase I Report
and Disposition

Institutional

Best
4/30/87

Scott should be emphasized as a supplemental to Lambert, not a replacement. Present and projected passenger and cargo enplanements (for example, see pages A-10, A-17 and A-21) are great enough to justify both facilities. The case for Columbia-Waterloo years ago was weakened by unfortunate references to the need for a "replacement" airport for Lambert.

Response: See response above.

Cecil
4/24/87

Military impact/enhancement: The study must make an absolutely iron-clad case for the airport being an enhancement to the continued operation of Scott AFB. It should address the increased acreage needed for Scott expansion, and the way that Scott's office space could increase with the airport. Also, if the increased space/additional runway would increase Scott's wartime mission (this could increase the viability of the base).

Response: See the revised Introduction of the Phase I Report.

St. Clair Co.
Farm Bur.
6/23/87

The report says that the Columbia-Waterloo Study consultants rejected a Scott alternative based in large part on its proximity to urban development. The location of Scott has, if anything, become more urbanized during the intervening years.

Response: While proximity to urban development was a consideration, the primary reason Scott AFB was rejected by the consultant was that at the time, the U.S. Air Force would not permit commercial air operations at Scott AFB.

St. Clair Co.
Farm Bur.
6/23/87

The question of Lambert's ability to meet future air traffic demands seems crucial to the financial viability of a second airport in the St. Louis area. We understand that Lambert Airport has begun the lengthy process of developing a master plan to enhance its future capacity. Until the results of the Lambert master plan are received and analyzed, the conclusions reached on this question in the Phase I Report seem premature.

Response: Opinion, no rebuttal.

St. Clair Co.
Farm Bur.
6/23/87

The need for a new major airport has been represented to the media and to the Citizens Advisory Committee as a regional solution to a regional problem. With its scope limited to only alternative sites in Illinois, the Phase I Report fails to take a regional approach to the situation and provides citizens with an incomplete range of alternatives. We believe that the Phase I Report should be expanded to include alternative locations on the west side of the Mississippi River.

Response: Opinion, no rebuttal.

Mork
FAA

Mr. Mork provided numerous informed substantive and editorial comments which were reviewed and incorporated into the Preliminary Phase I Report as appropriate.

Technical - Airport/Airspace

IDOAg
5/6/87

The Phase I Report did not address some major factors which could alter the acceptability of one alternative over another. No mention was made regarding general aviation's continued use of the St. Louis Regional or Downtown facilities should either be selected as the new commercial air carrier facility. Would a new airfield need to be constructed for general aviation's use or could the general aviation and commercial traffic co-exist at the same airfield? If a replacement airfield would be needed, hundreds of acres of additional agricultural land would be converted to non-farm uses.

Response: See pp. 3.3-4 and 3.4-4.

Tegtmeier
4/22/87

1. Who will appoint the Airport Authority (AA)
2. How are members of AA selected?
3. Will local cities/counties have representation?
4. Will AA have zoning authority?
5. How will AA be funded?
6. Assuming the Airport will be partially supported by local tax, who will determine tax rate and which areas will be taxed?
7. What other general authority will the AA have?

Response: This subject is outside the scope of the contract and will be determined at a later date.

Tegtmeier
4/22/87

There is a portion of a paragraph that greatly disturbs me. It is the last portion of the second paragraph on page 3.1-1. Comment follows:

I concur with the requirement that Air Force construction standards be strictly followed for the second runway and taxiways connecting to the existing runway. The balance of construction should be in accordance with "Standard Commercial Practice". Compliance with AF standards for other construction will not result in a better completed project. It will positively increase costs by 35%

to 50%. I have personal knowledge of this. I was Commissary Officer at Scott when an existing building was remodeled for a new commissary location. The contractor who performed the work informed me of the excessive cost created by restrictive standards that did not improve the finished job. His estimate of excess cost on that job was approximately 45%. Current information is that the surrounding area will probably be taxed for much of the construction, therefore costs should be kept to a minimum.

Response: Response not required.

Best
4/30/87

Although it is discussed on pages 3.1-23 and 24, the proposed configuration of the runway and terminal complex at Scott is not precise. To counter criticism, quantitative map locations and dimensions should be given.

Response: The runway and terminal complex location/configuration are only preliminary at this time. More detailed plans will be prepared during the second phase. Alternatives at Scott AFB will be reviewed in Phase II of the study.

Environmental - Parklands, Wetlands and Noise

IDOAg
5/6/87

The Phase I Report did not address the fact that as wetland habitats are destroyed, the U.S. fish and Wildlife Service and/or Illinois Department of Conservation may request the IDOT to mitigate for these lost habitats. If for example, 195 acres of wetlands are destroyed in the development of the joint use facility at Scott AFB, it is very likely that much additional agricultural land will be needed for mitigation purposes. Such land needed for wetland mitigation would be over and above the 1500 acre initial land purchase at Scott AFB.

Response: Good point, all alternatives in Phase II which impact wetlands will be reviewed accordingly.

Tegtmeier
4/22/87

One other item I could not find in the report is that commercial aircraft are required to conform to noise standards. Military aircraft are exempt from this restriction.

Response: Good point. This will be discussed in the Phase II Report.

Lysakowski
4/26/87

The noise level over O'Fallon and Shiloh which is very bad now has not been addressed to my satisfaction. O'Fallon is directly in the flight pattern.

Response: Noise impacts will be discussed in detail in Phase II.

Cecil
4/24/87

Environmental Impact: The True impact of using the wetlands must be addressed. If that is the best way, then provide the basis for a positive use - not a wishy-washy "well-maybe" statement.

Response: Detailed impacts to wetlands will be discussed in detail as part of the Phase II study.

Cecil
4/24/87

Noise Levels: A creditable way of showing people what a decibel sounds like, as it refers to jet aircraft. A sound model should be made, using video tape and sound. The vibration levels must also be presented in a creditable manner.

Response: Noise levels will be addressed in the Phase II study. Standard methodology required by USAF and FAA will be used.

Bossler
4/11/87

We are also greatly concerned about the increased noise levels that could result from the air traffic. Shiloh and Scott schools already adversely affected by the current airplanes associated with SAFB.

Response: See response above.

St. Clair Co.
Farm Bur.
6/23/87

The report identifies adverse impacts on farmlands, wetlands and noise as the three most important environmental concerns. Even though the report gave Scott unfavorable ratings on all three items, Scott was still recommended as the preferred location.

Response: Impacts to farmlands, wetlands and noise while important are not controlling factors in the ranking of the alternatives.

Environmental - Socioeconomics, Community, Farmlands

Best
4/30/87

Another "against" is cost. While the Scott alternative is cost-effective compared with other alternatives, the capital investment and cost of operation will be huge. What are the funding sources? The word has been spread that substantial local funds will be required and that this will lead to higher taxes. This factor will have to be examined. (Incidentally, the last line, page 5-5 of the study, waves a red flag. It might better read, "....thereby increasing tax revenue....".

Response: Economics and finances will be covered in Phase II of study.

Lysakowski
4/26/87

Another thing that really bothers me is the taking of prime farmland. Farm land is disappearing fast enough with the trouble the farmers are having with their products and we need all of the farm we can retain to provide the food for the country.

Response: Opinion, no rebuttal.

Lysakowski
4/26/87

I can't help but believe the taxpayers are going to get stuck with increase in taxes in one form or another and those citizens in the area involved should vote on whether or not they desire to foot the bill or want a joint use made of Scott.

Response: Opinion, no rebuttal. A vote on the Scott AFB proposal is an issue for local citizens and local government to address.

Lysakowski
4/26/87

I realize that many people will be looking at the economic impact such a venture would have on the area and I am sure that the impact will be good but whether it will offset the aforementioned reasons for not using Scott will have to be watched closely.

Response: Opinion, no rebuttal.

Cecil
4/24/87

Economic growth: Concrete evidence of what has happened in other areas with airport development. In particular, job creation, types; salary scales, number of workers per operation; economic impact per worker; economic impact for the number of projected operations, economic impact vs. taxes (cost to taxpayers).

Response: More detailed data to be provided in Phase II study.

Cecil
4/24/87

The use of farmland for an airport vs. as farmland from an economic standpoint should be addressed. How many jobs is that 1000 acres going to create with an airport vs. as farmland.

Response: More detailed analysis of using farmland for an airport will be addressed in Phase II.

Bossler
4/11/87

You greatly exaggerated the jobs with this civilian airport. The farmers are a business too; a very vital business. They also create many jobs. Agriculture generates an estimated 24 million jobs - 21% of the total U.S. workforce.

Response: Opinion/statement, no rebuttal.

Bossler
4/11/87

But we can't continue losing precious farmland to development and still continue as the world's top producer of food and fiber. This is very important to the well being of the United States. The Missouri Department of Conservation made a study in which they said "at the present loss rate, all of America's cropland will be destroyed in less than 100 years - a scary statistic.

Response: No rebuttal.

Bossler
4/11/87

My children and grandchildren want prime farmland to raise their food on too. I am trying to save some for them and I hope you will too.

Response: No rebuttal.

St. Clair Co. In its conclusion, the report says, "The
Farm Bur. socio-economic benefits of airport development
6/23/87 appear to outweigh the unmitigatable adverse
environmental impacts." This indicates to us that
the report favors growth at any cost.

Response: Opinion, no rebuttal.

St. Clair Co. The conclusion continues, "The 5 county region is
Farm Bur. in need of additional diversification from the
6/23/87 principal farming industry." While it is our hope
that an airport may enhance agricultural
opportunities, we would take issue with the
conclusion that the area needs diversification from
agriculture. A 1986 study, "Economic Development
Strategy for Southwestern Illinois," performed by
Arthur D. Little, Inc. rated agribusiness as the
economic sector in the region with the greatest
economic potential.

Response: Opinion, no rebuttal.

Miscellaneous/General

IDOA
5/6/87

First, all future documents which discuss positive or negative impacts of project alternatives should be more concise and comprehensive. It was very difficult to gather comparison information from the Phase I Report which could be used to compare the alternatives. The acreage of farmland contained within each alternative's total land acquisition is a good example. we are unclear if the acreage figures on the accompanying charts are even correct because they were not all concisely given in the report. Other figures on the chart are also subject to error due to the non-concise data in the Phase I Report.

Response: As study progresses, alternatives will be analyzed in greater detail.

IDOA
5/6/87

The Phase I Report did not analyze to any extent the fact that I-255 (FAP 413) is being expanded from I-270 to Illinois Route 267 at Alton. Will this four land highway's location be a positive or negative feature of the St. Louis Regional alternative? The report only says that I-255 "would make this site a viable option". However, one proposed alignment of I-255 would pass from north to south cutting off the eastern third of the site's proposed boundaries which may not make the alternative more viable. Rerouting of I-255 could convert many more acres of agricultural land.

Response: Access to St. Louis Regional was not the pivotal reason for its ranking. Its adjacency to urban areas and its limited capability to increase overall regional capacity were of greater significance.

IDOA
5/6/87

In summary, the Department of Agriculture recognizes that the Phase I Report was not designed to contain the detail that perhaps an environmental impact statement would contain. We do, however, feel that the report could have been more concise and should not have overlooked other factors which could have a major bearing upon an alternative's viability for the use intended.

Response: No response necessary.

Best
4/30/87

Pages 2-11 and 12. "On-site weather facilities" should be added.

Response: This criteria has been added.

Best
4/30/87

Page 3.1-14. "Sugar Creek" should be "Silver Creek."

Response: The responsible subcontractor was questioned on this point during preparation of the Phase I Report. "Sugar Creek" is correct.

Best
4/30/87

Exhibit 3.1-2. Upper left corner of map. U.S. 50 label should be placed further north.

Response: CMT has revised this exhibit.

Lysakowski
4/26/87

The impression received upon reading the report is that Scott has been selected already and the report is to back up the reasons for making the selection.

Response: Opinion, no rebuttal.

Lysakowski
4/26/87

The Tables giving the cost comparison of Scott to the other locations studied given one a view of only the cost for Scott since none of the other locations had a dollar amount given. One can not really compare costs since we were not given a true picture of the expenditures needed in the other locations.

Response: Cost was only one of the considerations and would not have been a controlling parameter unless prohibitively higher or dramatically lower. Such was not found to be the case.

Lysakowski
4/26/87

It appears to me the St. Louis Downtown - Parks Airport would be more logical than Scott. It is my opinion a military base should not be a joint use base. No place in the report do I find any discussion in detail about the many pumps underground at Scott now to keep the water level down and off the runways. I would like to know more about these pumps that were installed during the early depression years.

Response: Opinion, no rebuttal.

Bossler
4/11/87

We the people of Shiloh Valley and surrounding cities do not want this proposed air cargo airport because we have a right to our quality of life too.

Response: Opinion, no rebuttal.

St. Clair Co.
Farm Bur.
6/23/87

We believe that the do nothing alternative was not given serious consideration in the report. The do nothing alternative was not given any rating whatsoever in 14 of the 18 items considered in the comparison matrix. We believe that the do nothing option would have scored as well or better than Scott on each of these 14 items.

Response: The Do Nothing alternative received a composite rating of "poor" because this alternative does not satisfy the purpose of the project which is enhancement of the airport capacity of the region.

St. Clair Co.
Farm Bur.
6/23/87

It appears that St. Louis Regional Airport may have been significantly undervalued on the construction costs/cash flow, socio-economic and access/location items in the Alternative Comparison Matrix. With total development costs approximately equal to those at Scott, its closer proximity to downtown St. Louis and the planned extension of I-255 to serve the area, St. Louis Regional seems to deserve a rating on par with the Scott alternative.

Response: Opinion, no rebuttal.

St. Clair Co.
Farm Bur.
6/23/87

The report appears to present much of its information in a subjective rather than objective format. This creates the impression that the report lacks the needed depth of study and may have perpetuated several unsupported conclusions. Taken as a whole, we found that the report more closely resembled a sales tool for the Scott alternative than an objective study of the situation.

Response: Opinion, no rebuttal.